

TECHNOLOGY

REVIEW *December* 1954

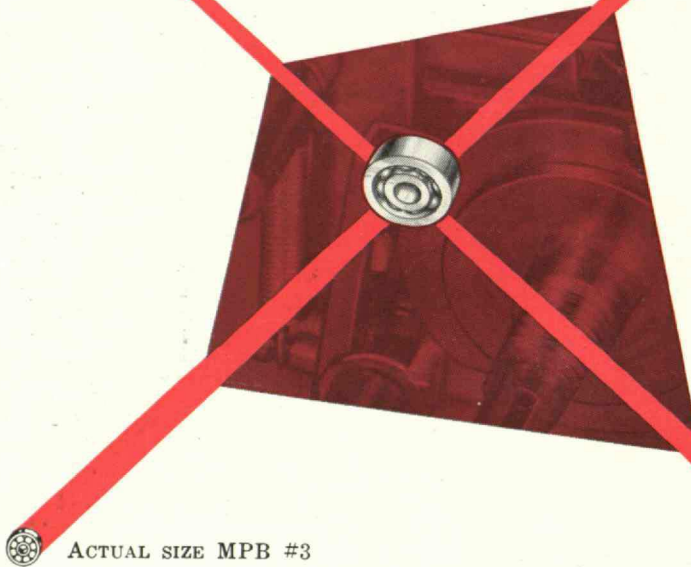
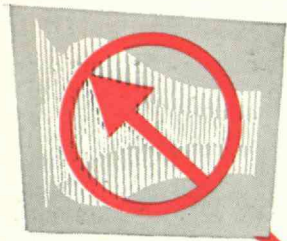


technology review

Published by MIT

This PDF is for your personal, non-commercial use only.
Distribution and use of this material are governed by copyright law.
For non-personal use, or to order multiple copies please email
permissions@technologyreview.com.

HOW MPB bearings solve miniaturization problem for Bendix Radio



ACTUAL SIZE MPB #3

MPB ball bearing used as Index Pawl in miniature frequency selector switch

OPERATING CONDITIONS — miniature ball bearing serves as index pawl in 4-position indexing device . . . bearing travels at 936 r.p.m. CRITICAL — low starting torque, low friction rotation . . . high impact loads . . . long, trouble-free bearing life. RESOLVED — by use of MPB No. 3, .1875" o.d. full-race bearing.

To quote Mr. John F. Wroten, Jr., mechanical engineer with Bendix Radio Division, these are some of the reasons why MPB bearings were selected in the miniaturization of their frequency selector switch: "The low friction rotation of the bearing practically eliminates drag in the indexing action, and reduces to a minimum the amount of power required for disengagement. Also, the bearing displays unusually high resistance to the frequent impact loads a detent stop of this kind must withstand Because rolling contact occurs between the pawl and the plate, the plate can be made of soft stainless steel."

For problems involving miniaturization, consult MPB, pioneer manufacturer of miniature ball bearings.

Miniature Precision Bearings, Inc., 103 Carpenter St., Keene, N. H.





New installations recently placed in operation at Lake Charles, include units for crude oil distillation, catalytic cracker feed preparation, Thermoform catalytic cracking, gas recovery, catalytic polymerization, catalytic reformer feed preparation and aromatics extraction.



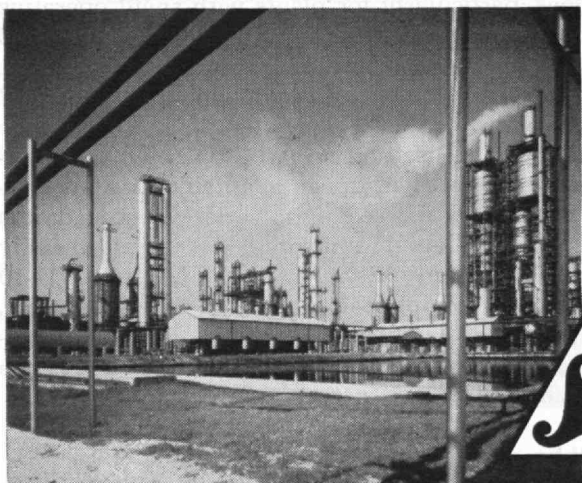
GREATER CAPACITY- EFFICIENCY- ECONOMY FOR CONOCO

For Continental Oil Company, Stone & Webster Engineering Corporation designed and constructed seven types of process units and enlarged an existing alkylation unit at the Company's Lake Charles, Louisiana, refinery.

Continuous flow through several of the units minimizes the need for intermediate offsite storage facilities; and all units are closely integrated for high heat economy.

These new units more than tripled the capacity of the refinery.

Write or call us for detailed information as to how our engineering, design, construction, report and appraisal services may be of assistance to you.



STONE & WEBSTER ENGINEERING CORPORATION BADGER PROCESS DIVISION

AFFILIATED WITH E. B. BADGER & SONS LIMITED (LONDON)

New York Boston Chicago Pittsburgh Houston San Francisco Los Angeles Toronto

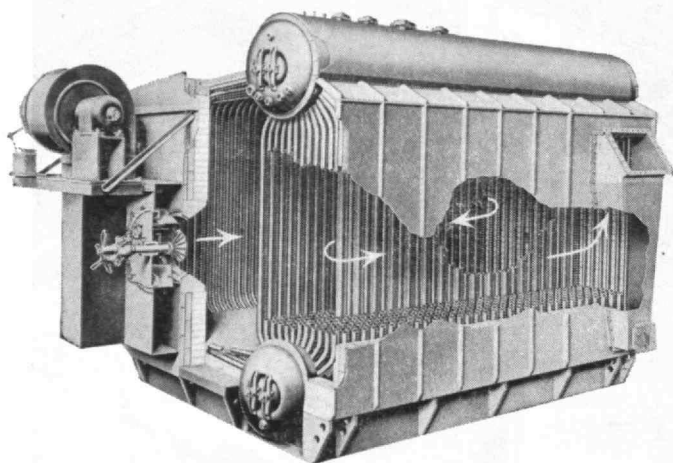
FOR STEAM CAPACITY up to 60,000 POUNDS

Choose your boiler from these two

If you burn oil or gas, investigate the VP Package Boiler for capacities up to 30,000 pounds per hr ... the VU-10 up to 60,000 pounds.

For stoker firing, the VU-10 is available from 10,000 to 60,000 pounds of steam per hour.

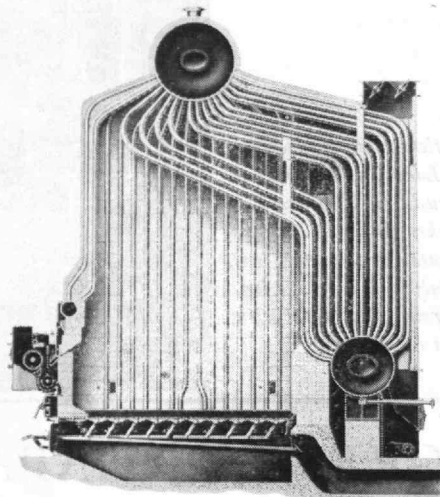
Whatever your fuel ... whatever your steam capacity requirements up to 60,000 pounds per hour ... you'll find that one of the Combustion Engineering Boilers described below will be just right for you.



The VP Boiler — the Package Boiler with EXTRA Features

The VP boiler

The C-E Package Boiler, type VP ... completely shop-assembled ... for oil or gas firing. It is available in capacities from 4,000 to 30,000 lb steam per hr; for pressures to 500 psi. The VP Boiler has more water-cooled area per cubic foot of furnace volume than any other boiler of its size and type. The large (30-in. diameter) lower drum permits a simple, symmetrical tube arrangement ... greater water storage capacity ... easy access for washing down or inspection. The centrifugal fan is efficient, yet its noise level is less than half that of typical high-speed blowers used on most package boilers. Baffle arrangement is simple, resulting in low draft loss ... simple soot blowing ... elimination of dead pockets ... high heat absorption.



The VU-10 Boiler, as arranged for C-E Spreader Stoker firing

The VU-10 boiler

The VU-10 Boiler is designed for industrial load conditions, particularly for plants with small operating and maintenance forces. Capacities range from 10,000 to 60,000 lb steam per hr ... pressures to 475 psi ... heat recovery equipment is available if desired. Fuel can be either coal (C-E Spreader, Traveling Grate or Underfeed Stoker) oil or gas. This boiler is a completely standardized design adaptable to many conditions. It responds readily to variations in load; it is simple to operate and maintain. All parts are easily accessible for inspection. Like the VP, the VU-10 Boiler is a complete unit — boiler, furnace setting, fuel-burning equipment, controls, forced draft — bringing you the benefit of one contract ... one responsibility.

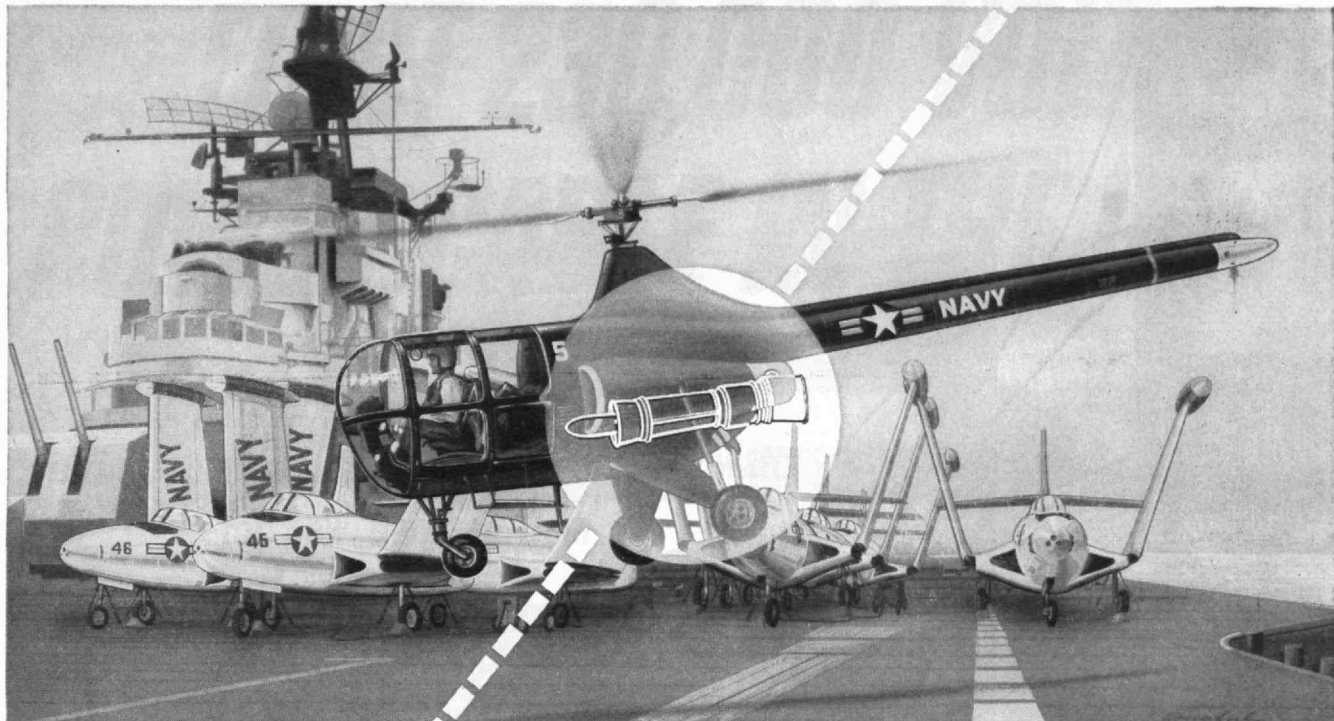
Fully descriptive catalogs are available on both of these boilers. We'll be happy to send yours upon request.



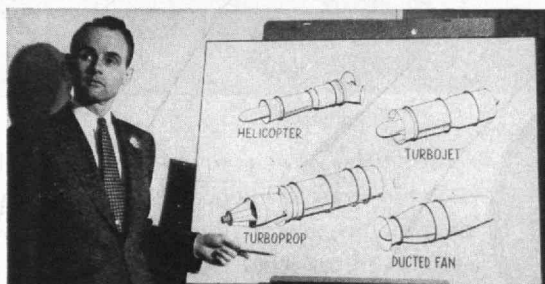
COMBUSTION ENGINEERING

Combustion Engineering Building • 200 Madison Avenue, New York 16, N. Y. B-7638

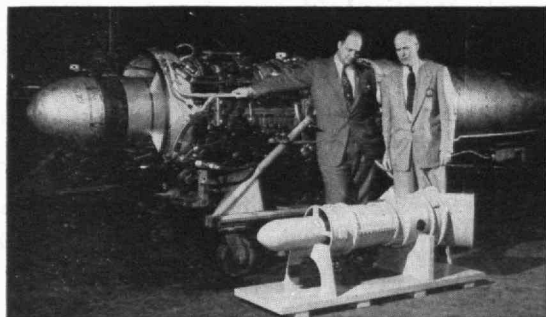
BOILERS, FUEL BURNING & RELATED EQUIPMENT; PULVERIZERS, AIR SEPARATORS & FLASH DRYING SYSTEMS; PRESSURE VESSELS; AUTOMATIC WATER HEATERS; SOIL PIPE



New Small Aircraft Gas Turbine Developments Create Opportunities For You At General Electric



Small Power plants under development or study by G. E. include these engines for use on helicopters, fighters, trainers, transports, missiles and dromes.



You will work on XT-58 Helicopter Engine being developed for U. S. Navy as shown above in front of J47-GE-17 jet engine, or on other small engines and related developments.

You can now join General Electric engineers who once again lead the way into new fields of aircraft propulsion. A new and expanding department offers the stability of employment traditionally provided General Electric professional people in addition to individual professional development and an opportunity for self-expression and rapid advancement. Investigating a variety of power plant systems is providing challenging problems in mechanical design, aerodynamics, control design and other related fields. This work combines the great potential of the gas turbine with the interesting and progressive field of aeronautics.

Located in New England, the G-E Small Aircraft Engine Department with its current staff of outstanding men in the field of propulsion systems is seeking to fill positions of responsibility. Work is being carried on under contract in areas of design, development and manufacture affording an opportunity for all phases of engineering activity.

For Further Information Contact

David B. Price

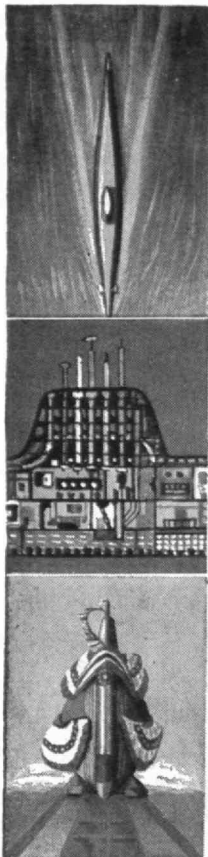
Small Aircraft Engine Department

1000 Western Avenue

West Lynn, Massachusetts

Progress Is Our Most Important Product

GENERAL  ELECTRIC



EB

ELECTRIC BOAT



dynamics for defense

On May 17, 1897, the New York Times reported the launching of the "Holland"—"the little cigar-shaped vessel... which may or may not play an important part in the building of the navies of the world..."

Since then, Electric Boat has built 226 submarines for the United States Navy and more than 100 for friendly foreign nations. Today, EB leads in the application of nuclear energy to propulsion with the world's first atomic-powered vessels, the U.S. Navy submarines "Nautilus" and "Sea Wolf".

For 74 years, divisions of Dynamics have pioneered in hydrodynamics, electrodynamics, aerodynamics and nuclear dynamics. In 1954, under the group concept of "Dynamics for Defense", they continue to make new and notable contributions to the military security and industrial progress of the nation.

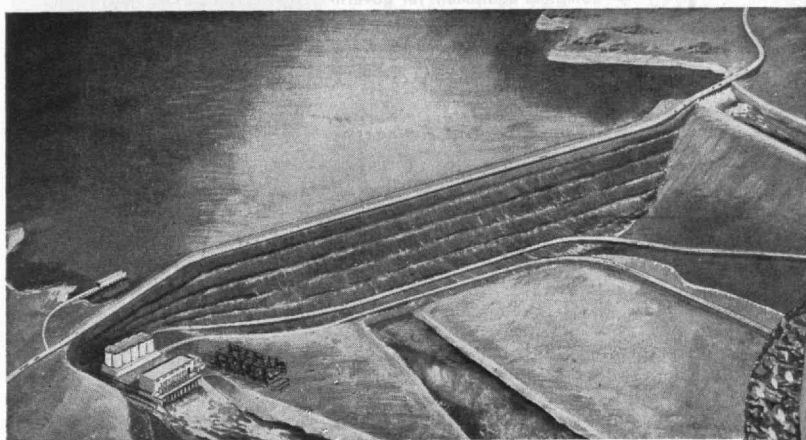
GENERAL DYNAMICS

DIVISIONS



FIRST 230,000 VOLT POWER CABLE IN THE U.S.!

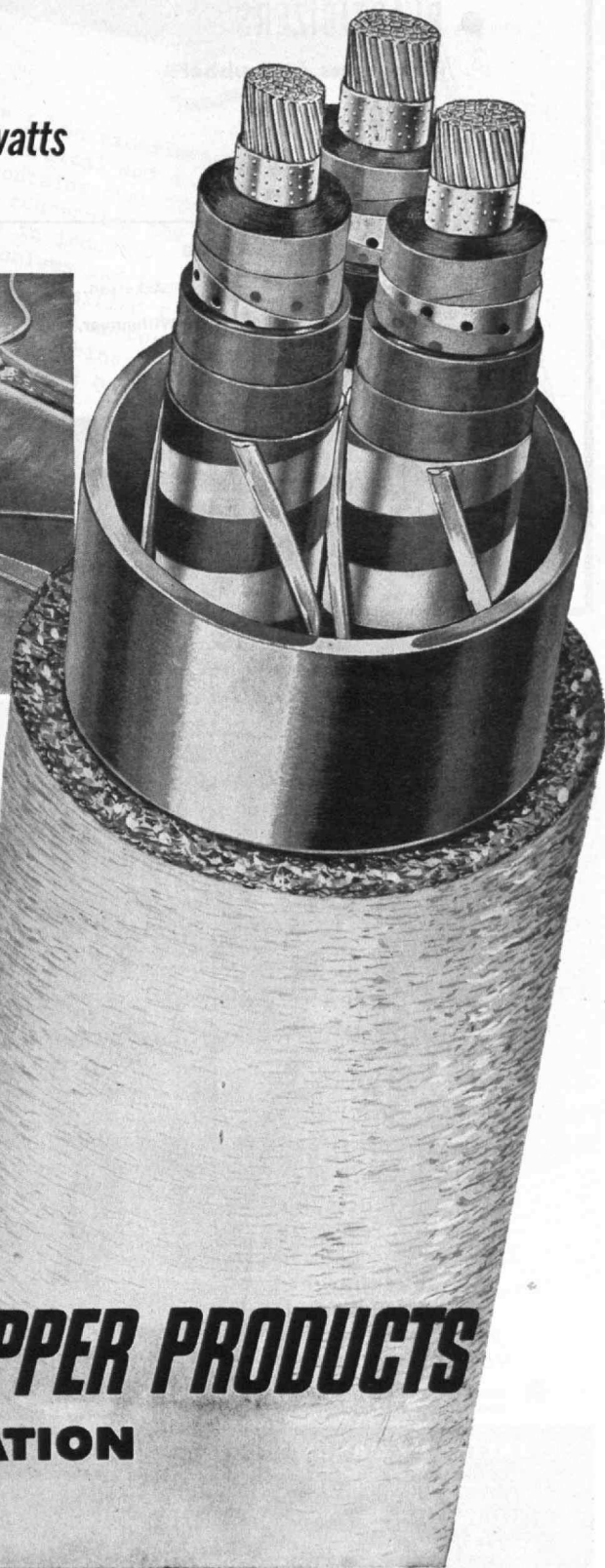
*Phelps Dodge to supply vital link
carrying potential output of 400,000 kilowatts
for new Garrison Dam*



Habirshaw pipe-type power cable will provide a dependable and economical means of carrying this tremendous bulk of hydroelectric power at 230,000 volts, from the powerhouse to the outdoor switching stations at Garrison Dam, being constructed at Riverdale, N. D., by U. S. Army Corps of Engineers.

The cable, a product of Phelps Dodge Copper Products Corporation, will consist of three 500,000 circular mil copper conductors, insulated with 835 mils of impregnated paper.

These insulated conductors will be pulled into pipes, which will be filled with oil at a pressure of 200 pounds per square inch.



PHELPS DODGE COPPER PRODUCTS CORPORATION

Call on Us for Plasticizers . . . Stabilizers

We're chemical processors producing:

● PLASTICIZERS

for plastics and rubber

● STABILIZERS

for plastics

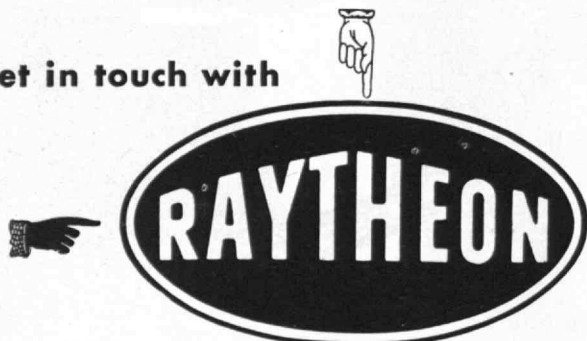
Dudley Clapp, 1910

J. Arthur Hansen, 1934 Everett R. Ackerson, 1941

Charles L. Viola, 1941 Robert H. Wittenauer, 1949

DEECY PRODUCTS CO.
PLASTICIZERS STABILIZERS
120 Potter St., Cambridge 42, Mass.

Get in touch with

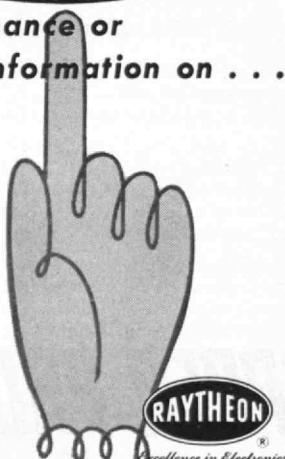


for product, performance or
application information on . . .

SEMI-CONDUCTOR
TRANSISTORS AND DIODES

TUBES
MINIATURE*
NUCLEONIC
RECTIFIER
RUGGED
SUBMINIATURE*
TRANSMITTING
VOLTAGE REFERENCE*
VOLTAGE REGULATOR*

* Many types available to military specifications for Reliable Tubes



RAYTHEON MANUFACTURING COMPANY

Receiving Tube Division — Home Office:
55 Chapel St., Newton 58, Mass. Bigelow 4-7500
For Application Information Write Or Call The Home Office Or:
4935 West Fullerton Avenue, Chicago 39, Illinois, National 2-2770
589 Fifth Avenue, New York 17, New York, Plaza 9-3900
622 South La Brea Ave., Los Angeles 36, California, WEbster 8-2851

Standard Quality sets Quality Standards

The day-in, day-out excellence, the quality which is standard in every Curtis Universal Joint, has made the Curtis Joint the quality standard of the industry.

Each Curtis Universal Joint component is made from specially selected steel, individually heat-treated for a specific purpose. This accounts for the inherent balance, long life and dependable performance of Curtis Universal Joints.

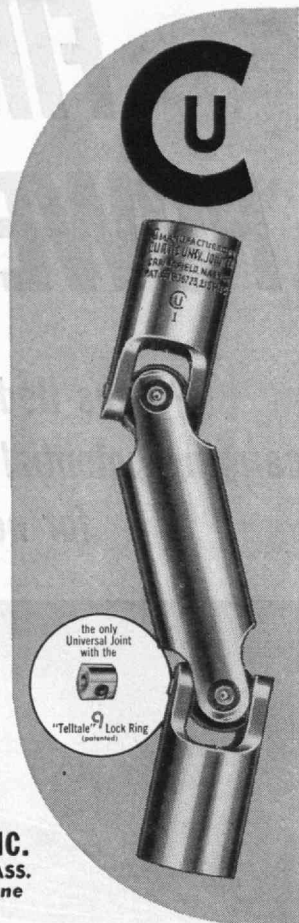
CURTIS UNIVERSAL JOINTS

- 14 sizes always in stock
- Fewer parts, simpler construction
- Complete equipment for government tests

Our catalog torque and load ratings are substantiated by constant tests. You can depend on them.

Not sold through distributors. Write direct for free engineering data and price list.

C CURTIS
Trade Mark
UNIVERSAL JOINT CO., INC.
8 BIRNIE AVE., SPRINGFIELD, MASS.
As near to you as your telephone



**ARTISAN
METAL PRODUCTS INC**
EQUIPMENT FABRICATORS
WALTHAM
MASS U S A

THE HALLMARK
of
SUPERIOR
EQUIPMENT

Artisan engineers and workmen are skilled in the techniques of metal working. Their combined knowledge and experience in engineering and building special equipment and machinery have been of value to many leading mechanical and process industries.

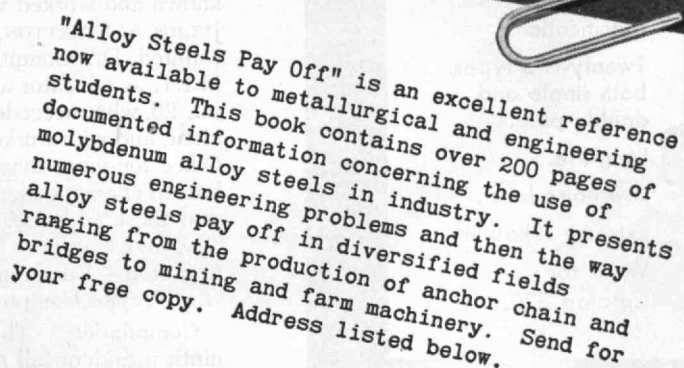
Write for a copy of "Process Equipment". For a qualified engineer to call to discuss your equipment requirements, telephone Waltham 5-6800 or write to: — James Donovan, '28, General Manager.

AUTOClaves
CONDENSERS AND
HEAT EXCHANGERS
DISTILLATION
EQUIPMENT
EXPERIMENTAL
EQUIPMENT
EVAPORATORS
MIXERS
JACKETED KETTLES
PIPE, PIPE COILS,
AND BENDS
REACTORS
SPECIAL MACHINERY
TANKS

Artisan METAL PRODUCTS, INC.

73 POND STREET, WALTHAM, (Boston 54) Mass.

60 case histories of alloy steels



"Alloy Steels Pay Off" is an excellent reference now available to metallurgical and engineering students. This book contains over 200 pages of documented information concerning the use of molybdenum alloy steels in industry. It presents numerous engineering problems and then the way alloy steels pay off in diversified fields ranging from the production of anchor chain and bridges to mining and farm machinery. Send for your free copy. Address listed below.

ALLOY STEELS
PAY OFF

Will data on molybdenum and the "moly" derivatives utilized in chemicals, agriculture and various phases of industry help your thesis project? If so, let us know your field of particular interest . . . write: Climax Molybdenum Company, 500 Fifth Avenue, New York 36, N. Y.

CLIMAX MOLYBDENUM

MU4-11

DC-AC CHOPPERS

For 60 Cycle Use

Built to rigid
commercial
specifications.

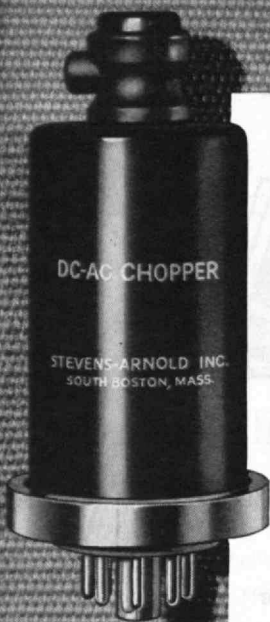
Twenty-two types,
both single and
double pole.

Long life.

Low noise level.

Extreme reliability.

Write for
Catalog 370.



**STEVENS
INCORPORATED
ARNOLD**

22 ELKINS STREET
SOUTH BOSTON 27, MASS.



S/A-10

GEARS

**Made to Your
Specifications**

You and we can form a team—you to draw up the specifications; we to make the gears—that will be profitable to both of us. Gears of all types, all sizes, all materials. Design-engineering service available.

Custom Gears
Exclusively

**DIEFENDORF GEAR
CORPORATION**
Syracuse 1, N. Y.



DIEFENDORF
GEARS

THE TABULAR VIEW

Convocation.—On October 4, Technology students joined members of the Corporation and the Faculty in Rockwell Cage for a convocation commemorating Karl Taylor Compton who won international renown as successful physicist, educator, administrator, and public servant as well as the respect of all who knew him. Dr. Compton's success as physicist was reviewed by GEORGE R. HARRISON, Dean of the School of Science, who had known and worked with Dr. Compton for three decades. JULIUS A. STRATTON, '23, Vice-president and Provost, recounted Dr. Compton's quarter-century affiliation with M.I.T. as educator and administrator. JAMES R. KILLIAN, JR., '26, who succeeded Dr. Compton as Technology's president, and who worked closely with him in the President's Office for more than a decade, spoke on Dr. Compton's human characteristics. It is The Review's privilege to present these addresses in this issue of The Review: "Karl Taylor Compton—Scientist," page 83; "Karl Taylor Compton—Educator and Administrator," page 85; and "Karl Taylor Compton—the Man," page 87.

Compilation.—The published writings of Technology's ninth president fall naturally into two broad and approximately equal groups. From 1910 until the mid-1930's, Dr. Compton's writings were almost exclusively scientific, but as his duties as M.I.T. President closed in on him, Dr. Compton's writings dealt more and more with broad topics in education, national service, and religion. His writings are scattered through many books and periodicals, but ELEANOR L. BARTLETT has compiled a total of 379 titles in what is believed to be a complete record of Dr. Compton's published work. Miss Bartlett is in charge of Special Collections in the Hayden Library; her careful compilation appears on page 89 of this issue of The Review.

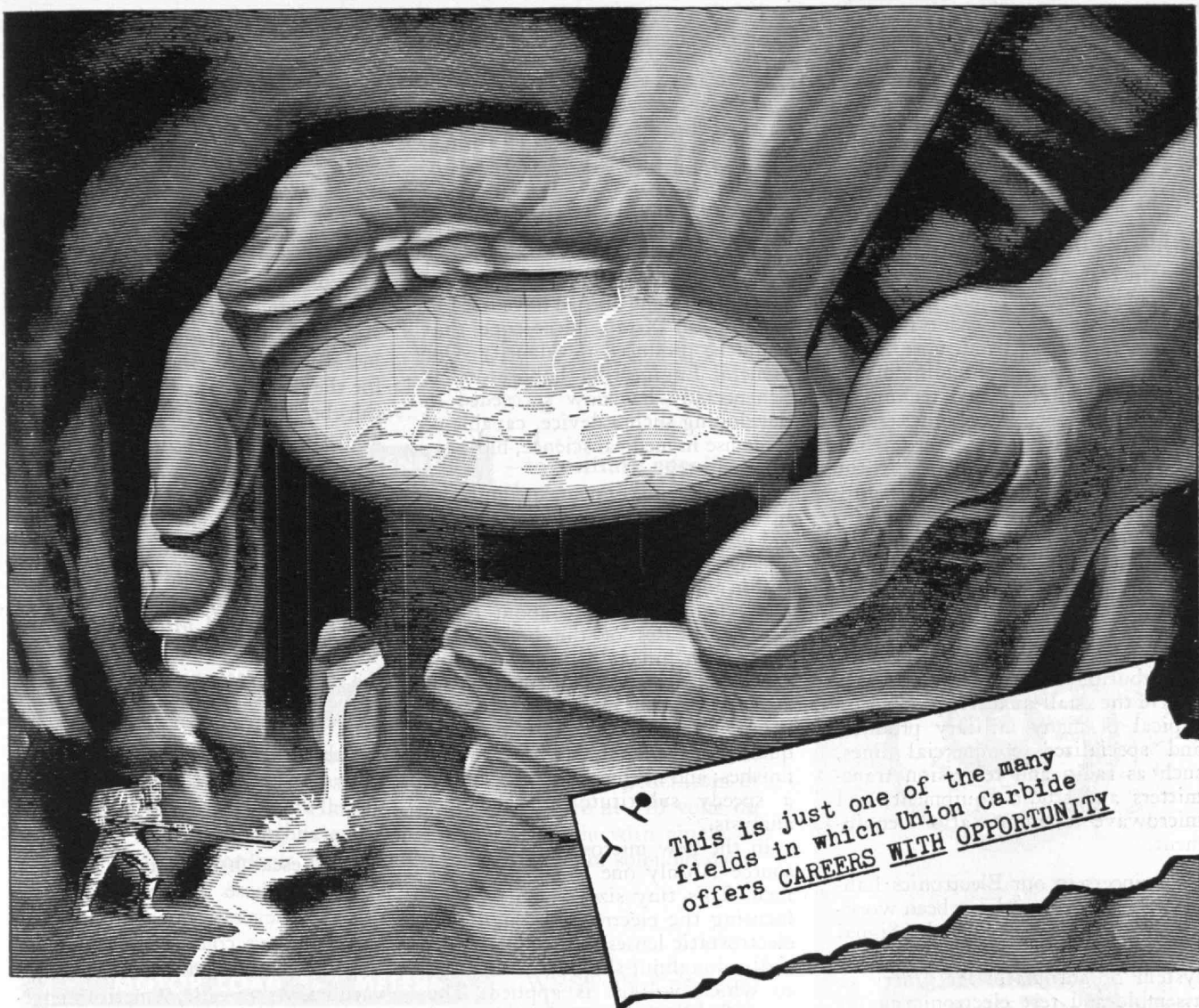
Competition.—EDWARD MCSWEENEY, '23, takes time from a busy administrative career to present "Some Observations on Executive Development" (page 93). In the second of his articles to appear in The Review—dealing with business administration in one form or another—Mr. McSweeney, who is president of Perkins-Goodwin Company, makes sage comments on a major problem confronting the nation's first-rank executives.



New York Telephone Co., Jamaica, N. Y.

**Four buildings erected for
New York Telephone Co.
1952 - 1954**

W. J. BARNEY CORPORATION
Founded 1917
101 Park Avenue, New York
Alfred T. Glassett, '20, President



This is just one of the many
fields in which Union Carbide
offers CAREERS WITH OPPORTUNITY

The hotter...the better

Carbon has a peculiar quality—it's at its best when "the heat is on"

IN THE ROARING HEAT of steelmakers' furnaces, molten metals boil and bubble like water in a teakettle.

STANDING FIRM in the intense heat of many of these furnaces are inner walls made of blocks of carbon.

Because pure carbon laughs at heat—actually grows stronger as it gets hotter—it has become vitally important in making iron, steel, and many of the other things all of us use every day.

IN CHEMISTRY, carbon and its refined cousin, graphite, handle hot and violent chemicals that would quickly destroy metal or other materials. Today there are pumps, pipes, tank linings, even entire chemical-processing structures—all made of carbon or graphite.

UCC... AND CARBON—For over 60 years the people of Union Carbide have pioneered in the discovery, development, and production of many carbon and graphite products for both industry and the home. This is one more way in which UCC transforms the elements of nature for the benefit of all.

STUDENTS AND STUDENT ADVISERS: *Learn more about career opportunities with Union Carbide in ALLOYS, CARBONS, CHEMICALS, GASES, and PLASTICS. Write for booklet H-2.*

UNION CARBIDE

AND CARBON CORPORATION

30 EAST 42ND STREET  NEW YORK 17, N. Y.

In Canada: UNION CARBIDE CANADA LIMITED

UCC's Trade-marked Products include

NATIONAL Carbons	ELECTROMET Alloys and Metals	HAYNES STELLITE Alloys	PRESTONE Anti-Freeze	LINDE Oxygen
ACHESON Electrodes	PREST-O-LITE Acetylene	PYROFAX Gas	EVEREADY Flashlights and Batteries	Dynel Textile Fibers
KARBATE Corrosion-Resistant Equipment		BAKELITE, VINYLITE, and KRENE Plastics		SYNTHETIC ORGANIC CHEMICALS

What General Electric people are doing . . .

BRAINY PUNCH PRESS

The increasing need for electronic equipment of all kinds in today's economic system has made it necessary to focus more and more attention on the problem of finding manufacturing equipment and techniques for making such electronic equipment automatically. But, while much effort has been applied to the automatic production of such equipment in quantities in the hundreds or thousands, very little has been done to increase the productivity of the job shops which turn out such equipment in small quantities—lots of from 10 to 50. Any improvements in this field would make their greatest contribution in improved automation of the small-quantity production typical of many military products and specialized commercial lines, such as radio and television transmitters and studio equipment, and microwave communication equipment.

Engineers in our Electronics Laboratory at Syracuse have been working on this problem for the Signal Corps, which wants to develop a system of automatic machinery to assemble and test electronic circuit sub-assemblies for various types of military electronic equipment. One of the results of this work is an automatic punchpress with an electronic "brain," which may well be another step toward the automatic factory of the future.

Directions are fed to the new punchpress by an electronic digital computer. The computer "reads" a perforated card for information on size, number, and location of holes to be punched. The press automatically positions the material to be perforated and performs its punching operations within an accuracy of a few thousandths of an inch. The techniques involved could well be applied to other industrial operations such as drilling, riveting, stapling, electrical testing, etc. The sub-assembly being produced can be changed simply by punching new directions on a new program card, with no time lost for retooling or training operators.

X-RAY MICROSCOPE

For many years laboratories both in this country and abroad have tried to develop an X-ray microscope that could be produced in quantity. Our General Engineering Laboratory at Schenectady has now succeeded in developing such a device, capable of wide use in medical science, biology, and industry.

The new instrument, magnifying up to 1500 diameters, is expected to aid in the development of new alloys and in studies of such things as corrosion and welding of metals; to help researchers learn more about tooth decay, diseases of the bones, and other such human ailments as mineral deficiencies and hardening of the arteries; to assist in the study of such things as the covering or bonding quality of paints, adhesives and finishes; and in some cases to provide a speedy substitute for chemical analysis.

In the new microscope the X-ray source is only one 100,000th of an inch. This tiny size is achieved by focusing the electrons through two electrostatic lenses, which are essentially doughnut-shaped metal rings to which voltage is applied. The magnified X-ray image thus obtained can be seen by the eye or photographed for permanent record. While the idea of the electrostatic lenses was not new, our laboratory's contribution lay in finding a practical way to use them. The instrument provides great stability for the longer exposures needed for high-quality pictures, and it is the first to use a built-in camera that provides developed photographs immediately after a subject is exposed. It is not affected by magnetic materials and therefore can be used in the study of steel and alloys.

Our X-ray Department in Milwaukee will take over production of the device, after further refinements in design at Schenectady.

CLEANER ALLOYS

One of the important facets of the modern industrial picture is the significant part which is played by metallic alloys. And the prospects for the future indicate that this part can become even more significant as better alloys are developed.

A stumbling block in the path of this progress has been mechanical impurities which find their way into the alloys during the melting process. The major source of such impurities is the atmosphere, which forms oxides and nitrides with the various alloying elements. The result is a distinct weakening of mechanical properties in fabricated products, and this weakening is accentuated in the case of high-temperature alloys, in which the materials produced are subjected to extremes of stress and temperature.

Our Research Laboratory has been studying these effects and their causes for several years. It found that cleaner alloys could be produced in large-size induction furnaces at high vacuum. As a result, American engineers can now expect to have some of the "impossible" alloys and other metallurgical materials they need to accomplish dream-world feats.

Such vacuum-melted, high-temperature alloys are now being produced by our Carbonyl Department in Detroit, for use in turbine-wheel buckets of jet engines and other applications. Heading the list is a new alloy capable of withstanding higher temperatures than any wrought alloy now in production. This new alloy has stress-rupture properties superior to those exhibited by conventional wrought turbine bucket alloys such as M-252 and S-816.

Progress Is Our Most Important Product

GENERAL  ELECTRIC

designer's

INSTRUMENT guide

RUGGEDIZED INSTRUMENTS

—to military specifications, available in 2½", 3½" and 4½" sizes in D-C, movable iron A-C, rectifier type A-C and thermo instruments. All have sealed, externally operated zero correctors—shock-resisting, flat plastic windows—and connection terminals molded into internal rubber.

ULTRA-SENSITIVE RELAYS

—extremely compact and rugged relays which operate on values as low as ½ microampere or ¼ millivolt, direct from thermocouples, resistance bulbs or other generators of minute current. Handle substantial wattage at 110 volts on non-chattering magnetic contacts. Available with single or double contacts, fixed or adjustable, manual or solenoid reset.

"MOTOR LOAD %" METERS

—WESTON "per-cent load" ammeters and wattmeters make it easy for operators to secure optimum production from lathes, milling machines, automatics, grinders, etc. Prevent overloading—reduce tool breakage—assure uniform quality with fewer objects. Other scale calibrations available.

RECORDING POTENTIOMETER

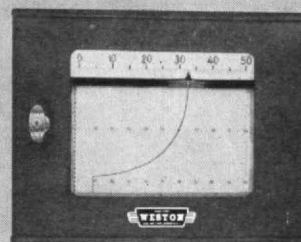
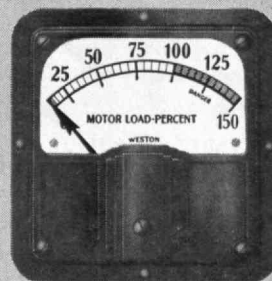
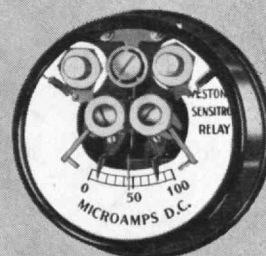
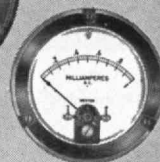
—ideal for built-in needs because of its extreme compactness plus ruggedness and simplicity. Ranges changed simply by inserting required range standards. Chart speeds changed by simple screwdriver adjustment. Plug-in amplifier removed in a jiffy since no soldered connections are used.

Literature on any of the above instruments sent on request.
WESTON Electrical Instrument Corporation,
614 Frelinghuysen Avenue, Newark 5, New Jersey.

8106

WESTON

Instruments



Why Suburbanites give you more "pull-through" grip than other winter tires!



THE SECRET: the first logical winter tread design! See how the skier angles his skis to walk right up the slope. His ski edges cut right into the snow in a "herringbone" pattern—let him climb the steep hill with no trouble at all.

Goodyear's great Suburbanites have the most logical winter tread design in the world. It works the same way as skis in the "herringbone." Four rows of sharp-



edged cleats are angled to bite into the snow—give you a sure grip on any road. The wide winter tread of the Suburbanite is made of 464 of these cleats with 1856 sharp edges. These cleats dig in like claws for greater traction in snow and mud—a better grip on ice.

Get Suburbanites and you'll get better starting, safer stopping, surer traction this winter. See your Goodyear dealer now. Goodyear, Akron 16, Ohio.



Suburbanite cleats are flexible so the tread cleans itself as it rolls—it's always ready to give you a surer grip.

On cleared highways, its flat tread runs quietly, smoothly. Goodyear's new Suburbanite is quieter than other winter tires.

Suburbanites by **GOOD YEAR**



BEST WAY TO PULL THROUGH WINTER!

Suburbanite, T. M.—The Goodyear Tire & Rubber Company, Akron, Ohio

THE TECHNOLOGY REVIEW

THE TECHNOLOGY REVIEW

TITLE REGISTERED, U. S. PATENT OFFICE

EDITED AT

THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY



Eberh. B. Oppi

Norwegian Pastoral Scene

Editor:
B. DUDLEY

Business Manager:
R. T. JOPE

Circulation Manager:
D. P. SEVERANCE

Editorial Associates:
PAUL COHEN
J. R. KILLIAN, JR.
F. W. NORDSIEK
J. J. ROWLANDS

Editorial Staff:
RUTH KING
EVANGELINE SFERES

Business Staff:
EILEEN E. KLIMOWICZ
MADELINE R. MCCORMICK

Publisher:
H. E. LOBDELL

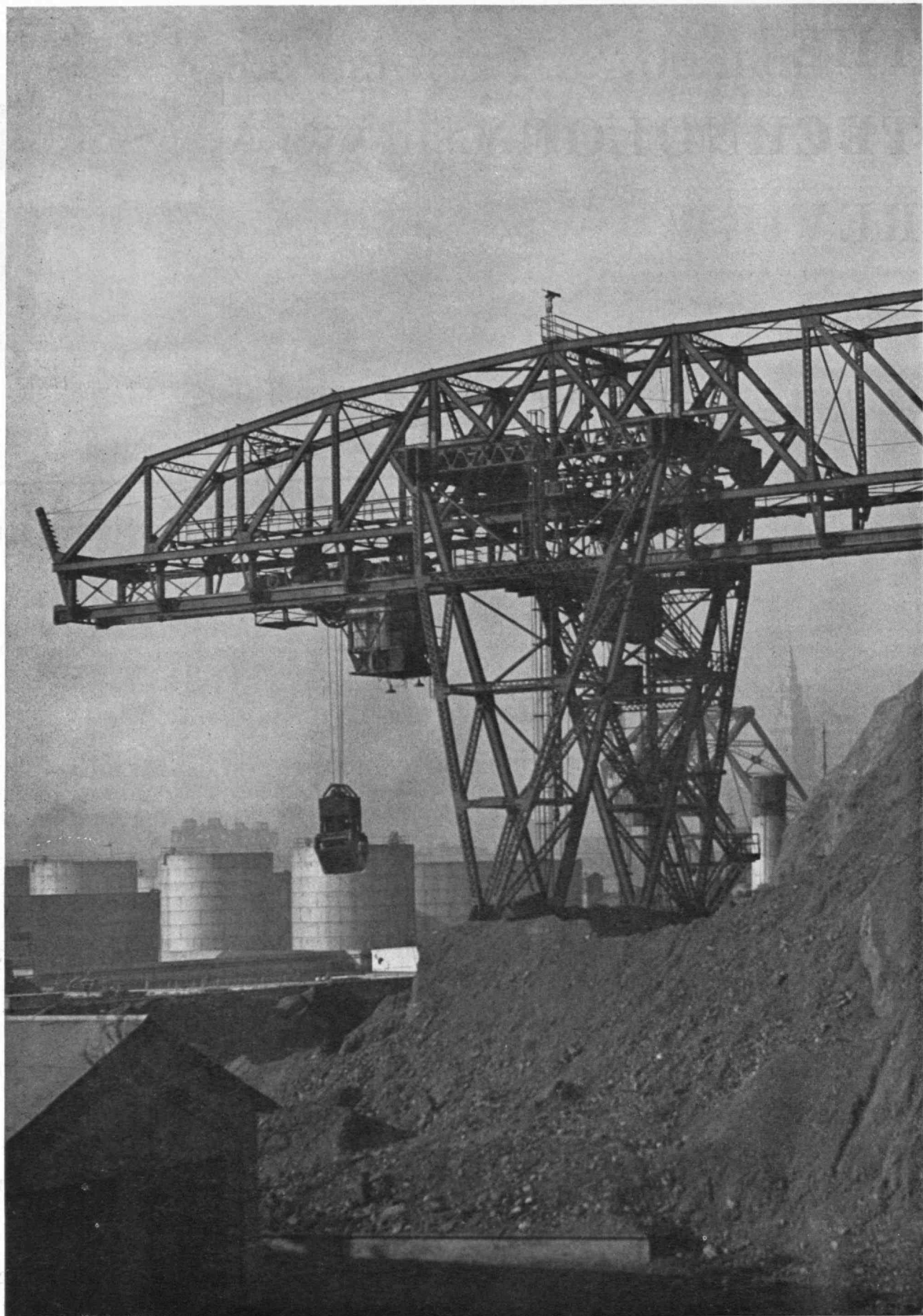
VOL. 57, NO. 2

DECEMBER, 1954

CONTENTS

"LET HARPS AND HEARTS BE STRUNG"	
PHOTOGRAPH BY EWING GALLOWAY	THE COVER
OVERHEAD CRANE	
PHOTOGRAPH BY K. H. STRELOW FROM BLACK STAR ...	FRONTISPIECE 78
KARL TAYLOR COMPTON: SCIENTIST • BY GEORGE R. HARRISON	83
<i>The scientific achievements of the Institute's ninth president are evaluated by a physicist who worked with him for three decades</i>	
KARL TAYLOR COMPTON: EDUCATOR • BY JULIUS A. STRATTON	85
<i>Reminiscences of President Compton's achievements in Cambridge are reviewed by the Institute's provost</i>	
KARL TAYLOR COMPTON: THE MAN • BY JAMES R. KILLIAN, JR.	87
<i>Dr. Compton's successor comments on the human characteristics of M.I.T.'s ninth president</i>	
THE WRITINGS OF KARL TAYLOR COMPTON	
BY ELEANOR L. BARTLETT	89
<i>Compilation of Dr. Compton's writings demonstrates he dealt successfully with an unusually wide range of topics</i>	
SOME THOUGHTS ON EXECUTIVE DEVELOPMENT	
BY EDWARD MCSWEENEY	93
<i>There is growing recognition that one of the major tasks we face is that of training tomorrow's top leaders</i>	
THE TABULAR VIEW • Contributors and Contributions	72
THE TREND OF AFFAIRS • News of Science and Engineering	79
THE INSTITUTE GAZETTE • Relating to the Massachusetts Institute of Technology	96

Published monthly from November to July inclusive on the twenty-seventh of the month preceding the date of issue, at 60 cents a copy. Annual subscription, \$4.00; Canadian and foreign subscription, \$4.50. Published for the Alumni Association of the M.I.T.: Hugh S. Ferguson, President; H. E. Lobdell, Executive Vice-president; Richard S. Morse, Gilbert M. Roddy, Vice-presidents. Donald P. Severance, Secretary-Treasurer. Published at Hildreth Press, Inc., Bristol, Conn. Editorial Office, Room 1-281, Massachusetts Institute of Technology, Cambridge 39, Mass. Entered as second-class mail matter at the Post Office at Bristol, Conn. Copyrighted, 1954, by the Alumni Association of the Massachusetts Institute of Technology. Three weeks must be allowed to effect change of address, for which both old and new addresses should be given.



K. H. Strelow from Black Star

An Overhead Crane in the Cuyahoga River Valley, Cleveland, Ohio.

THE TECHNOLOGY REVIEW

Vol. 57, No. 2

December, 1954



The Trend of Affairs

Spoilers of Nature

UNTOLD human resource is dissipated in a never-ending struggle against microorganisms that cause disease, spoil foods, and destroy materials. Control of disease-causing microbes has been revolutionized within the past decade by the antibiotics, prototype of the "wonder drugs" (see "Tenth Anniversary," The Review, July, 1953, page 482). Therefore it is scarcely surprising that attempts are now being made to employ antibiotics in another phase of man's eternal battle with the microbes, the preservation of foods.

Attempts to use antibiotics in food preservation are following two main avenues. First are studies to see whether small concentrations of antibiotics increase vulnerability of microorganisms to heat. If they do, lower temperatures and shorter times of heating might be used to sterilize foods in cans or glass containers. This would be desirable because heat adversely affects nutritive values, flavors, colors, and other physical attributes. In short, canned peas don't look or taste like fresh peas.

The other avenue of approach is research to see whether antibiotics inhibit bacteria in foods that are not sterilized, but are kept under refrigeration; for example, fresh meats.

A recent study of the first sort observed action of the antibiotic subtilin on heat destruction of two spore-forming bacteria commonly responsible for spoiling foods. Spore formers were studied because they are the most heat resistant of bacteria. Furthermore, one of the bacteria studied causes the food poisoning called botulism. It was found that low concentration (three and a half to 14 parts per million) of subtilin significantly accelerated destruction by heat of both bacteria studied.

Recent research on refrigerated foods has explored the effects of antibiotics on rate of spoilage of

ground beef. Six antibiotics — penicillin, bacitracin, streptomycin, aureomycin, chloromycetin, and terramycin — were tested. They were applied to the ground meat in low concentrations, two parts per million or less. Keeping quality was judged by observations of color, odor, and consistency of the meat; and by counting the total number of bacteria present after various intervals of storage. It was found that three of the antibiotics significantly delayed spoilage of the refrigerated meat; the other three were ineffective.

In order to learn the mechanism of this preservative action, the three effective antibiotics — aureomycin, chloromycetin, and terramycin — were tried against pure cultures of 92 different bacteria of 12 genera, commonly found in beef and therefore implicated in its spoilage. Most, but not all, of the bacteria were inhibited by one or more of the antibiotics. It is noteworthy that action of the antibiotics on the different bacteria varied thus, in contrast to chemical disinfectants and heat which are nonselective in antibacterial action. Of course chemical disinfectants cannot be applied to foods.

These results are provocative, but indicate that much more research needs to be done before antibiotics could actually be used in food preservation. The observation that some common meat spoilage bacteria were unaffected by antibiotics reveals an inherent limitation.

Also still to be resolved is the question of possible antibiotic residues remaining in foods until they are eaten. As recently pointed out in the pages of The Review (see "Plus Factors," December, 1953, page 79), there is active current concern over possible toxicity of residues in foods of agricultural sprays, insecticides, chemicals used in processing, and similar additives. If antibiotic residues remained in foods as a result of use in preservation, such residues might well have adverse effects upon consumers.

Trends in M.I.T. Education

IT will come as no surprise to Technology Alumni that the Institute's Faculty and Administration constantly study educational needs and methods at the collegiate and graduate levels, and that they are also intensely interested in the quality and quantity of training at the preparatory school level. The Institute itself is a direct outgrowth of a concept of education that was new a century ago, and M.I.T. has never lost its urge to pioneer in academic spheres. But the scope and magnitude of the problems that will confront college and university administrators — especially for the next quarter century — may not be so clearly perceived by readers of *The Review*. These educational trends were discussed by Julius A. Stratton, '23, Vice-president and Provost, at the October 25 meeting of the Alumni Council. In fact, Dr. Stratton's penetrating analysis was so admirably delivered as to justify fuller treatment than could possibly be given in the usual report of this meeting.

Primarily Dr. Stratton's remarks dealt with the growth and ultimate size of M.I.T. Many pressures are now at work tending to increase enrollment in the nation's schools. Therefore, the desiderata confronting the Institute are but small part of a nationwide problem. Of course the Institute is subject — and responsive — to the same kind of pressures toward expansion that affect all the nation's schools. But the ultimate size of M.I.T. cannot be determined solely in terms of the increasing number of children entering, or already registered in, primary schools. The Institute's growth and ultimate size are intimately related to its past history and its evolving character. The magnitude of its growth, and the quality of its product, have an impact upon the future structure of M.I.T., upon its resources, upon the composition of its alumni body, and even upon the process of higher education itself.

Throughout its entire history, education at M.I.T. has continued to follow the broad aims and objectives of its founder, William Barton Rogers. To be sure, changed conditions sometimes required modifications of the Institute's program, but each of the Institute's presidents found it possible and desirable to make the necessary adaptations within the framework of the basic philosophy of "learning by doing" laid down a century ago. Thus, for instance, in his inaugural address in June, 1930, Karl T. Compton, President, stated that, under his administration, "the purpose of the Institute shall remain unaltered." Dr. Compton believed that, by placing greater emphasis on science and the fundamentals of engineering, M.I.T. training could be strengthened, and he devoted much of his effort to building up the Institute's departments in the physical sciences. In the choice of his Faculty, Dr. Compton was guided by the highest standards of excellence. During his administration, the School of Humanities and Social Studies was established, graduate education and research increased markedly, and great impetus was given to organizing science and putting it to work for the general welfare. Yet all of these changes were consistent and in harmony with the Institute's original purpose.

Likewise, the administration of James R. Killian, Jr., '26, President, provided for modification and expansion within the framework of original M.I.T. objectives. In his inaugural address in 1949, Dr. Killian viewed M.I.T. as a special type of educational Institution which he defined as "a university polarized around science, engineering, and the arts; a university limited in objectives but unlimited in the breadth and thoroughness with which it pursues these objectives." During President Killian's administration thus far, the School of Industrial Management has come into being and successful efforts have been made to emphasize training of "the whole man."

In contrast to its earlier years, when the Institute was composed primarily of the Schools of Engineering and Architecture, today M.I.T. emerges with a structure of five professional schools, each headed by a dean as its principal administrative officer. Until about 1952 the Institute's academic and administrative activities were conducted under one roof and, in large measure, this characteristic of M.I.T. has been responsible for the unity and cohesiveness with which the Technology community was marked. It is no longer possible for all M.I.T. activities to take place under one roof and, as the Institute continues to grow, the communications and personal contacts of an earlier era become increasingly difficult to maintain so that any potential weakening of the unity of earlier decades must be guarded against. Dr. Stratton stated that even now there seem to be indications that the Institute's structure may tend to be moving toward a form more nearly resembling a federation of professional schools, and that changes in its administrative structure probably will be required to counterbalance this trend. But a study of the administrative structure is already under way.

The growth in the number of professional schools at M.I.T. has been paralleled by a great increase in the amount of sponsored research undertaken by the Institute and its Faculty. Most of the Institute's sponsored research is administered by the Division of Industrial Cooperation and, more recently, also by the Division of Defense Laboratories. In large measure, the growth of research activities since 1940 has been stimulated by the requirements of national defense, but it has also been nurtured by general recognition that science — even "pure" science — has great practical value. It is often difficult, or even impossible, for the Institute to refuse to conduct research it may be asked to carry on in the interests of national defense, but M.I.T. does not seek research contracts that do not make a contribution to the educational process. Research of the proper kind plays a significant role in graduate study by bringing students and Faculty alike into intimate contact with the forefront of knowledge in the physical sciences. The benefits of such research are felt even at the undergraduate level. It is not likely that the Institute will be able — or will wish — to make drastic reduction in its research activities. Nevertheless, constant vigilance is needed to assure that such research as is undertaken makes a real contribution to education (or to national defense) and does not deteriorate to the level of routine test operations.

Dr. Stratton took pains to point out that any intelligent estimate of the size of the Institute in future years must take into account a realistic appraisal of its past and present size and composition. He presented figures, given in Table I, showing the growth in the number of undergraduate students, graduate students, foreign students, and Faculty members (of the grade of assistant professor or higher) for several years. Data were selected for 1930 (the beginning of Dr. Compton's administration), for 1938 (the last of the "normal" peacetime years), for 1950 (which is fairly representative of the postwar period), and for the current year. In addition to the data in Table I, Dr. Stratton recalled that the total number of persons affiliated with the Institute includes research, secretarial, and other groups who make up the "Technology community" but who are not included in Table I. As of December, 1951, the total Technology community numbered 10,194; in December, 1952, it was 11,693; and the figure for November, 1954, is probably in the neighborhood of 12,000.

TABLE I — GROWTH OF M.I.T. ACADEMIC BODY

	1930	1938	1950	1954	1954 to 1930
Number of:					ratio, in per cent
Undergraduate students	2,670	2,401	3,496	3,470	135
Graduate students	539	692	1,675	1,826	338
Foreign students	181	231	464	600	302
Faculty members	240	285	436	513	214

In addition to these figures of more or less normal growth, certain changes in the Institute's practices within recent years have tended to draw new groups to Cambridge. In this category Dr. Stratton mentioned the increase in Summer Session participants and the growing number of guests and visitors who come to Technology for varying lengths of time.

Until about 1950 the Institute's summer session was intended to serve the needs of students who wished to make up deficiencies or to take additional subjects for advanced standing. Since the end of World War II, however, there has been growing need for special courses, conferences, and symposia for graduate scientists and engineers engaged in industry and who wish to avail themselves of latest knowledge in specialized fields of technology. Under this program (reported by Ernest H. Huntress, '20, page 191, February, 1954, issue of *The Review*), the Institute is able to utilize its extensive plant facilities more efficiently throughout the entire year while simultaneously providing educational services to

TABLE II — SUMMER SESSION REGISTRATION

	1950	1954	1954 to 1950
Number of:			ratio, in per cent
Special students	343	1,510	440
Regular students	1,964	1,671	85
Total students	2,307	3,181	138

technical industries or the secondary schools. The growth of the number of students attending summer sessions in recent years is given in Table II, but these data do not properly reflect the changing character of the Summer Session, nor do they hint at the increased number of contacts with industry which the Institute maintains as a result of its new program.

The evolving character of the Institute may also be indicated by the number of guests who come to its Cambridge campus for various reasons. No complete compilation of this group is available because many who pay brief visits do not register. Nevertheless, for the 1953-1954 academic year, the Registry of Guests shows that the Institute had 29 guests, 50 visiting fellows, 947 registered visitors, and 172 visiting professors and lecturers. This group may have resided at the Institute for periods of time ranging from a day or two, to a full academic year. A quarter of a century ago M.I.T. was not confronted with such a large and distinguished array of arrivals, many of whom required living accommodations on the campus, so here again the evolving character of the Institute becomes evident.

We turn now to an examination of significant external factors which tend to increase the size of the Institute's student body, Faculty, and research activities. First and foremost is the growth of the nation's population since World War II, but of equal significance is the tendency for students to remain in educational institutions for a longer period than in the past.

TABLE III — VITAL STATISTICS, CONTINENTAL U. S.

	1930	1940	1950	1954
Population (thousands)	122,400	131,600	150,700	165,000*
Births (thousands)	2,304	2,360	3,554	4,120*
Birth rate (per thousand)	18.8	17.9	23.6	25*

*Estimated

Data in Table III show that the population in the continental United States, as well as its rate of growth, is increasing significantly. Births occurring in 1954 may be twice the number that took place in 1927, and the children that will challenge our educational system are already born. Primary schools are already facing a serious problem in providing teachers and adequate buildings for the bumper crop of babies born since the end of World War II. Soon preparatory schools will face a similar problem. By 1970 institutions of higher learning will be called upon to provide libraries, laboratories, classrooms, dormitories, and athletic facilities to an extent difficult to envision at the present time, even if the proportion of persons going to college remains fixed.

TABLE IV — COLLEGE ENROLLMENT IN 18-21 YEAR GROUP

	1900	1939	1952	1970
Per cent of 18-21 age group enrolled in college	4	16	25	26-28*

*Estimated

But American education is not a static affair. An increasing fraction of young persons of college age

enter institutions of higher learning, as Table IV shows, and this group will expect to find adequate facilities when they enroll in college.

In 1952 the nation's colleges and universities enrolled 2,148,000 students. Taking all reasonably predictable factors into account, by 1960 this figure is expected to climb 34 per cent for a total enrollment of 2,800,000; and by 1970 college enrollment is expected to reach 4,300,000—double the 1952 figure!

All of these considerations point to the need for increasing the nation's educational facilities appreciably within the next decade. For example, on the average, we must expect a 50 per cent increase in primary school enrollment by 1962, a growth of 75 to 80 per cent in secondary school attendance by 1965, and an increase in college student population of 100 per cent by 1970. Providing for the new educational needs will be a very sizable—and costly—undertaking. To meet these needs it has been estimated that the nation will have to spend 20 to 25 billion dollars for primary and secondary schools, and 20 to 30 billion dollars for higher education within the next decade and a half. In somewhat more dramatic manner, President Killian has stated that, in the next 14 years, the colleges and universities of the United States will be called upon to spend as much for plant expansion as they have spent from the founding of Harvard College to the present time!

In brief, this is the over-all picture of the educational needs of our country in the foreseeable future. Dr. Stratton warned that the technical and scientific schools face additional problems tending to increase their responsibilities and encourage growth.

The expansion of scientific and technological frontiers certainly cannot be halted; it is not even possible to retain the present rate of growth. There is a proliferation of new areas of activity that, in itself, calls for increased effort on the part of institutes of technology. A little more than a decade ago there was no field of nuclear engineering and, except for its application in communications, the burgeoning field of electronics was not a major part of our electrical industry. Today the colleges must prepare scientists and engineers for careers in these fields which already affect the lives of all of us in direct manner. Or, we may ask, can the universities afford to neglect new spheres of activity, such as those being opened in biology and psychology, for example, as the result of new techniques and instrumentalities which research brings into being? Of course not. Yet, as the universities expand their activities into new and promising fields, it is not possible to eliminate the older and more traditional areas of study. In the future we may be required to give more attention to aerodynamics, solar energy, and antibiotics than is now essential, but this does not mean that we can dispense with the traditional topics of mechanics, physics, and chemistry.

The problems confronting administrators in academic circles are difficult ones and there is no easy or simple solution to the naïve question, "What is the Institute going to do?" Of course it is unrealistic to assume that growth can be halted at the present level, but it should be possible to limit expansion so far as the Institute is concerned. Possibly the pri-

vately endowed institutions may find it necessary to become increasingly selective in the choice of their student bodies, leaving to the publicly supported universities the task of caring for the major portions of tomorrow's college graduates. At least, such a trend would be in keeping with the M.I.T. tradition of placing emphasis upon quality rather than on mere quantity of output. The high standing of M.I.T. students must be maintained, in the undergraduate as well as in the graduate schools.

The relatively rapid growth of graduate work and research, which has occurred at M.I.T. since the war, has sometimes raised the question as to whether the Institute was tending to become predominately a professional graduate school. Dr. Stratton took pains to point out that this is definitely not so, and that the undergraduate school is now—as it has always been—the core of the Institute. Yet there is a practical limit to the number of freshmen who can be admitted to M.I.T. Adequate facilities for much more than about 900 freshmen are not available, and consequently the size of the incoming class is necessarily limited. Possibly the freshman class will never greatly exceed 1,000, for the Institute's goal is to improve the quality rather than the quantity of its student body. This becomes increasingly difficult as personal contacts between individual students and Faculty members are diluted. In this connection it is interesting to note that the ratio of Faculty members to undergraduate students is higher today than it was a quarter of a century ago, as shown in Table I.

But while the size of the undergraduate body is a primary concern, the size of the Graduate School also requires study. The Graduate School cannot be expanded indefinitely, of course, but the nation is in great need of advanced scholarship of the highest caliber, carried out in sufficient amount. Especially in the last quarter century, M.I.T. has been called upon to carry more than its share of such responsibilities; the future may make similar demands. Requirements of national defense have undoubtedly accelerated the growth of the Graduate School, as well as sponsored research conducted by the Institute. No qualified institution can fail to make its just contribution to the nation's welfare, but sponsored research is welcomed at M.I.T. only when it makes a real contribution to higher education. Such a philosophy assures that research and graduate education will best reinforce and supplement one another in the long run.

Finally, stated Dr. Stratton, it is necessary to maintain the unity of M.I.T. Too large an institution, or one with too many schools, tends to become subject to centrifugal forces which are a potential threat to its unity and cohesiveness. To counteract such a trend, the Administration must provide a centripetal force which is directed toward binding the Schools together toward a common aim or objective. This can be done for M.I.T., Dr. Stratton believes, by emphasizing the impact which science makes on our daily lives, and by making any necessary administrative changes to insure that each portion of the Institute conforms to these broad aims, first stated by William Barton Rogers.

Karl Taylor Compton: Scientist, Public Servant

By **GEORGE R. HARRISON**

WE have all become accustomed to thinking of Dr. Compton as one of the greatest presidents the Institute has had, and as a beloved elder statesman on the national scientific scene. But now I remember visiting him in Princeton just 30 years ago, when he was making a name as a budding young physicist. He had received his Ph.D. some 12 years before, and after a few years spent at Reed College and on various wartime duties, had risen through the ranks to a full professorship at the age of 32.

During my years of graduate study in physics, K. T. Compton was one of the big names in the new field of electronics. The critical potentials of atoms had been discovered only a few years before, and he and his students were writing outstanding papers on this subject. For 15 years he built up at Princeton one of those "schools" which arise spontaneously about investigators who have great imagination and drive, and the country is still sprinkled widely with the Ph.D.'s he guided with a sure and inspiring touch.

Karl Compton loved his laboratory and the young men who worked with him on their doctoral researches. They, to a man, idolized him as fulfilling their concept of everything that a scientist should be and do. One of the best recommendations for an electronics specialist today is that he or his teacher studied with Karl Compton.

I remember a lecture given here some 20 years ago by Dr. [C. E. K.] Mees of the Eastman Kodak Company. Dr. Compton, while introducing the speaker, as a fairly new president mentioned the cost and complexity of the apparatus required by young scientists while doing their thesis research, and how happy he was that M.I.T. could furnish their needs, and had professors who would devote so much time to helping them. When he started work for his doctor's degree, he said, his professor had led him to a table placed in a cranny in the basement under a staircase, and had told him that this space would be assigned for his investigations. He had not seen the professor again, he said, until he was about ready to hand in his thesis. Promptly piped up Dr. Mees, "Well, look at our boy now!"

By 1930, Compton had published more than 100 technical papers in fields ranging from photoelectric phenomena to spectroscopy in the extreme ultraviolet. Then came the great transition from physicist to administrator, a sacrifice which he made willingly, but not without much internal struggle.

In the waning 1920's, it became apparent that a new president must soon be sought for M.I.T. As a bit of preliminary maneuvering, young Compton of

Princeton, then 42, was asked to investigate and make a report on the M.I.T. Physics Department. His reaction to his visit here was typical. The number of students who majored in physics then was relatively small anywhere, and M.I.T. was at that time almost entirely an engineering school. Dr. Compton, as a professional physicist, felt that a much greater contribution to the cause of engineering and science could be made by a department that had, in addition to its service function, a primary function of educating professional physicists who could compete on the national scene with those from outstanding universities. After his report was in, he was asked to accept the presidency of M.I.T. He told me later that he had replied that he would not be interested in being associated with an institution whose Physics Department had so small a research budget as that then provided, but was informed that if he accepted the presidency this would be a matter for his own decision. He finished his story by remarking that it had not been emphasized, at the time, that it would also be up to him to raise the needed money.

When Dr. and Mrs. Compton came to M.I.T. in 1930, he took the very firm stand that he must allot himself at least a day a week, free from administrative duties, in which to continue his own researches. He called several of us from elsewhere to be members of a Physics Department whose research facilities and effort he hoped would be built up rapidly, and he wanted to participate directly in this. He and a research associate brought with them from Princeton a large vacuum spectrograph which they had designed together. On arrival in Cambridge, they discussed the course which this research was to follow; then K. T. became immersed in his new duties as president, after assuring his colleague that he would be available every Thursday to help in tracking down the wavelengths of elusive spectrum lines. Unfortunately his administrative duties proved so overwhelming that several weeks went by with no visits to the laboratory. Finally, his young assistant telephoned, and Dr. Compton promised faithfully to put in an appearance on the following Thursday. At two o'clock he rushed in, and spent the afternoon happily wiping oil from the insides of a vacuum pump, which he disassembled for cleaning. However, the presidential duties closed in permanently that evening, and this was his last appearance as an active research performer in the Spectroscopy Laboratory.

Dr. Compton's stature as a scientist, and above all as a scientist with such traits of character and personality as to make him spontaneously accepted as a leader by laymen and scientists alike, led inevitably through his emergence as an outstanding edu-

cator, which Dr. Stratton discusses (page 85), to his crowning career as a statesman-scientist and scientist-statesman. He was a condensation nucleus about which scientists could cluster with enthusiasm.

Early in 1940, Vannevar Bush [16], formerly Dr. Compton's Vice-president and Dean of Engineering here at M.I.T., called Compton, together with President [James B.] Conant of Harvard and a number of others, to help him organize the National Defense Research Committee. It soon became apparent that radar was to be one of the great keys to national defense, and Dr. Compton proceeded at once to build a powerful research division, which led ultimately, among other things, to the great wartime Radiation Laboratory at M.I.T. The output of this group had a decisive effect on the turning of the tide to victory, and when after the war Dr. Compton was awarded the Presidential Medal for Merit, his citation stated that the importance of the work he did might be said to have made him personally responsible for hastening the termination of hostilities. His intimate knowledge of science and scientists, his deep awareness of the problems of national defense, and the universal confidence in his judgment, statesmanship, perception, and impartiality, made men willing to work under his aegis who might have hesitated when summoned by lesser men.

An example of his great gifts as a catalyst was his relationship with Army officers, who at the beginning of the war were somewhat skeptical of the general usefulness of scientists, and tended to be jealous of the invasion of the weapons field by denizens of the laboratory who had entirely different ways of going about things. Dr. Compton was understood and trusted by military men from the beginning. Before the war had gone very far they wanted to make him a major general, but his civilian status was more valuable in bringing different groups together, and in his blue serge suit he was able to talk with admirals, generals, and civilians on equal footing. Toward the end of 1943, as Chief of the Office of Field Service of the

Office of Scientific Research and Development, he flew to the Southwest Pacific area and convinced General [Douglas] MacArthur that improved liaison should be set up between his armed forces and the output of the research laboratories of the United States as funneling through the O.S.R.D. in Washington. Although Dr. Compton was in Australia and New Guinea for only three weeks, he left a permanent impression on everyone who came in contact with him — from General MacArthur down.

Such talents were sufficiently rare that the government let Dr. Compton have no rest, and his response to every demand was such that only his rugged constitution and athletic build kept him going. To select a few of his many appointments at random, he was a member of the War Resources Board, the Baruch Rubber Survey Committee, the Advisory Staff of the Chief of Ordnance, the Joint Committee on New Weapons of the Joint Chiefs of Staff, and the Secretary of War's Special Advisory Committee on the Atomic Bomb. He landed in Tokyo among the first civilians after the surrender terms were signed. After the war, he was chairman of the Research and Development Board of the National Military Establishment until his health required him to lessen his activities in the affairs of the nation.

Men need and love heroes. This convocation is to honor a man who was a great hero in the truest sense. I feel that the origins of Dr. Compton's heroic stature lie in the universality of his interests. Most of us are interested primarily in people, or in things, or in ideas. Many of those whom we accept as leaders have risen to that stature because they are interested in *both* people and ideas, or people and things, or things and ideas. Dr. Compton was interested, vitally, in people, in things, and in ideas. This breadth of his concern, coupled with other great qualities, brought to him unique insight and wisdom. For many years to come, as for the past 30, American scientists will continue to think of him as one of their most stalwart colleagues, benefactors, and friends.



Skidmore, Owings and Merrill

As a fitting memorial to the Institute's ninth president, and particularly in recognition of his work as a physicist, a new building to be erected at M.I.T. will be known as the Karl Taylor Compton Laboratories of Nuclear Science and Electronics. As shown in the artist's conception, the new and much needed laboratories for the physical sciences will join the Dorrance Building which houses the Departments of Biology and Food Technology, shown at the left.

Karl Taylor Compton: Educator and Administrator

By JULIUS A. STRATTON

ON the afternoon of the 12th day of March, 1930, in a brief and simple ceremony, Karl Taylor Compton was presented to our Faculty convened in Huntington Hall as the 11th* President of M.I.T. To so many of you who are of a younger generation of Faculty and students, it will be difficult to convey a full sense of the meaning of that occasion; of the warmth and sincerity of his welcome; of the bright promise it held for our future.

Karl Compton came to us in a time of adversity. We had lost President [Richard C.] Maclaurin at a most critical point in our history. There had been a long interregnum without a president. The postwar demands of industry upon our Faculty, the chaotic effects of inflation in the Twenties upon all academic life, and then the onset of the depression years — all these conspired against the progress of the Institute. With his coming, M.I.T. began to surge with new life and a new faith. No man ever fulfilled more completely his first promise; for much of the greatness of M.I.T., as you know it, is the fruit of his labors.

On that afternoon in the spring of 1930, Karl Compton was, to most of our Faculty of engineers, little more than a distinguished name. He was an outstanding physicist, already a noted figure in the scientific life of the country, yet to our Faculty a stranger. In an incredibly short time all this was changed and we took him to us as one of our own. He became our friend, our confidant, and our leader. His roots were deep in academic soil. His father was in turn professor of philosophy, dean and acting president of the College of Wooster. Both his brothers became presidents of colleges, and his sister was the wife of the president of a Christian college in India. No family has made more distinguished contributions to American education than the Comptons. Karl Compton too had served his apprenticeship in teaching: instructor in chemistry at Wooster, and then doctor of philosophy, *summa cum laude*, at Princeton; for three years instructor of physics at Reed College under one of the great teachers of American science, followed by a return to Princeton as assistant professor of physics — eventually to become research professor and chairman of the Department. Teaching and research were in his blood.

It was no easy decision for Dr. Compton to abandon this life that he loved at Princeton and to assume the multitude of cares that burden every college president. We all take pride in the vast prestige achieved lately by the Institute, but one must not belittle the past in order to brighten the present. A quarter-century ago M.I.T. was an institution of

world renown. We were no less thorough in our methods or less jealous of our standards than today; our objectives only were narrower, our field of interest more confined. In 1930 we were in essence an undergraduate school of engineering. Mathematics, physics, economics, and the humanities all were subservient to the requirements of the engineering curricula. Science, as Dr. Compton had known it, graduate study and research, were almost wholly absent. We belonged to the broad family of academic institutions, but were of a species quite foreign to his earlier interests and experience.

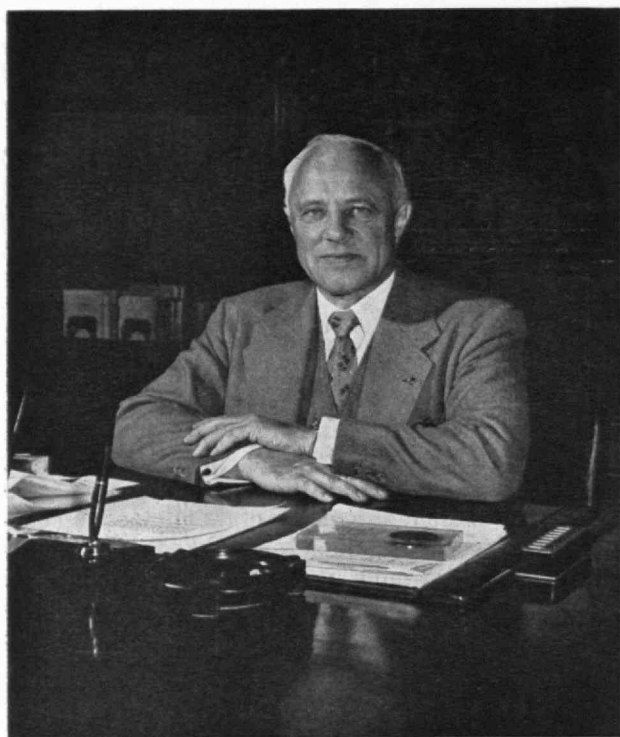
You are all aware that M.I.T. was founded on a plan and philosophy of education formulated by William Rogers more than a century ago. Karl Compton understood that plan, adopted it, and was loyal to it throughout the remainder of his life. He sought not to change the aims and methods of the Institute, but to enlarge and enrich them. All this he made very clear in his inaugural address with these words:

There appears to be no reason for any change in the purposes and ideals of the Institute. It has been devoted in the most fundamental way to the benefit of mankind through science. There is every indication that only a beginning has thus far been made in the science of discovering and understanding nature, and in the art of usefully applying this knowledge. I can conceive of no more appropriate or urgent program than simply to continue the work of developing both principles and men for applying science to the problem of human welfare.

And then in that same first address he set forth the aims that would guide his own administration. I should like to read them to you in part. In June of 1930 they expressed his goal; 20 years later they might summarize his achievement.

Although the purpose of the Institute is unaltered, I do believe that present conditions indicate the necessity of careful attention to several vital matters. First, I would suggest the necessity of greater emphasis upon the fundamentals of science, both in their own rights and as a basis of the various branches of engineering. As engineering has developed greater and greater complexities, it becomes increasingly impossible to hope to train men in those exact processes of thought or manipulation for which they will later be called upon. Many who start in as engineers later become executives or administrators. In all such situations a broad and full training in fundamental principles gives much greater power than a training in details which may seldom be encountered in practice. Whereas a generation ago most of our great technical industries were in their infancy and needed many men trained in the details of their respective arts, now most of these industries are large organizations which are equipped and prefer to train their own men in

* He was the ninth to hold title of president. There had been acting presidents who intervened.



Karl Taylor Compton
President of M.I.T., 1930-1949
Chairman of the Corporation, 1949-1954

Symbolic of his role as educator and administrator is this view of Dr. Compton at his desk in the President's Office. To name a few of the honors bestowed upon him are: the Medal for Merit, the Marcellus Hartley Public Welfare Medal of the National Academy of Science, and the William Procter Prize for Scientific Achievement from the Scientific Research Society of America. He held honorary degrees from 32 colleges and universities. In public service he gave generously of his talents to the War Department, the National Military Establishment, the Atomic Energy Commission, and to organizations in the New England area. Aided by him in World War II was the National Defense Research Committee, Office of Scientific Research and Development. Dr. Compton held membership in numerous societies — scientific and otherwise — and was president of at least five. His board memberships included the Ford Foundation and the Alfred P. Sloan Foundation.

the fine points of their art: they absolutely require, however, men who come with a sound basis of training in fundamental principles. The Institution which supplies these men supplies the men destined to leadership.

I hope, therefore, that increasing attention in the Institute may be given to the fundamental sciences; that they may achieve as never before the spirit and results of research; that all courses of instruction may be examined carefully to see where training in details has been unduly emphasized at the expense of the more powerful training in all-embracing fundamental principles. Without any change of purpose or any radical change in operation I feel that significant progress can thus be made.

Second, let me emphasize the supreme necessity of maintaining a Faculty of absolutely first grade. The needs of an educational institution for the best men should supersede the claims of any other organization, for it is these men in the educational institutions who train and inspire all the others; their abilities are renewed and made available to the world in every graduating class.

These then were his views as he took over the reins of administration.

There are many men with ideas, but ideas without action serve little purpose. William Barton Rogers was a great innovator in education not simply because of the novelty of his ideas, but also because he was able to express them in the establishment of a new institution. Karl Compton was one of the great leaders of our time, not only because of the depth of his understanding of the needs of education in science and technology, but because he met and fulfilled those needs through the institution entrusted to his care.

If you who are students of M.I.T. today find here first-rank departments of science, it is because Karl Compton knew the true qualities of science, believed that science must be cultivated for its own sake, and possessed the power to draw men of stature to his side.

If you observe here a school of engineering acknowledged throughout the world to be without peer, it is because Dr. Compton sought to nourish engineering education at its roots, to weed out elements that with time had become vocational or obsolete, and because he sought tirelessly for teachers of distinction.

If at M.I.T. you find a fusion of the humanities with science and technology in a manner that has begun to challenge the traditional patterns of liberal education, that is because he envisioned for the scientist and engineer a role in industry and government of steadily widening responsibility.

If, finally, you have sensed that with the Faculty you are sharing in the life of one of the great research centers of our time, it is because of his conviction that teaching becomes sterile unless refreshed at the wellsprings of new knowledge.

Dr. Compton was a wise and skillful administrator, but it was by no simple art of administration that he brought M.I.T. into the small company of great universities. In every sense he was a leader, matching a fine mind with a radiant personality. As one looks back over the years of his presidency, it is easy to discern the tangible, material progress of the Institute; but the great gift that he bestowed upon us was his spirit, the shining example of his own life. We were moved by the transparent honesty of his aims. We felt the warmth of his interest in each and every one of us and, students and Faculty alike, we responded with loyalty and pride in his own great achievements.

The fame that M.I.T. has achieved throughout the entire world has grown to such proportions that it frightens many of us who are so keenly aware of our own defects and of the long road that lies ahead before we can attain our ultimate goals. Yet this fame rests on the solid accomplishments of our graduates, upon the enormous contributions to the advancement of knowledge and the unselfish services made in the public interest by our Faculty. And underlying these evidences of our new stature, there is a hidden strength that comes from an inner harmony, a unity of purpose and action, an extraordinary absence of factionalism and petty dissension.

This is why to me, and I know to you, that M.I.T. is a good place to be. This was Karl Compton's spirit; this was his true bequest.

KARL TAYLOR COMPTON: THE MAN

By JAMES R. KILLIAN, JR.

Not long before his death, Karl Compton was asked to summarize in a paragraph his creed or philosophy of life. "My wife and I," he answered, "have adopted as a motto a phrase which we saw on a sign at a campsite on one of our canoe trips north of the Minnesota border: 'Leave every campsite better than you found it.' This, we think, is a good guiding principle in any situation in which one's lot happens to be cast."

I can think of no better way to introduce my tribute to Karl Compton, or to summarize what has been said by Dr. Stratton and Dean Harrison, than to add that Karl Compton was superbly successful in leaving every campsite better than he found it.

In looking back over the press clippings recounting his exploits as the captain of his college football team, one finds that he was guided, even then, by this principle, for the stories report that he was a player "who always did more than his share," and that he played every game to the end.

In this thinking always of others and in always carrying more than his share of the burden, Karl Compton demonstrated the generosity of spirit which was one of his primary characteristics.

The response to him of his friends, his associates, and even those casually acquainted with him was invariably a reaction of spontaneous pleasure in a personality completely free of guile, a personality sensitive in perception, emanating goodness and wisdom, always generous and benevolent in human relations.

The comments that men made about him revealed the characteristic response of people to his radiance, his charm, and his humanity. One person would say that Karl Compton was the most princely man he had ever known, another that he was the exemplar of the Christian gentleman, another that he was unselfish almost to a fault, another that he was always kind and courteous to "us small people." Others spoke of his capacity never to cease growing in his outlook, his perception, his understanding, and his interest in the public welfare. Others thought of him as Pope said of Harley — "a steady man" with a "great firmness of soul" who had the courage to stand against the tide of public opinion. Others spoke of the beauty of his face. Once when Helen Keller was at a luncheon with him at the President's House, she asked to touch his face and then spoke of its quality of radiance. Helen Keller readily sensed what we had the privilege to see. Still others stressed his extraordinary capacity to achieve teamwork among his associates and to make it seem little and unnecessary for people

to indulge in bickering and trivial differences. In a way of which he himself was probably unaware, he had a wondrous gift for calling forth the best in other people and for engendering a spirit of good will among all coming within his influence.

Those of us who had the privilege of working for him and with him recall many other facets of this many-sided man. We recall how, at the end of the day, he seemed as fresh, indefatigable, and sagacious as he had at the beginning. We recall how skillful he was in his administrative methods. More than anyone that I have ever known, he possessed the "soft voice of command," the capacity to lead and to direct, not through the exercise of authority or the giving of orders, but through capacity to influence people to want to do the things that ought to be done.

Those of us who had the privilege of associating with him also delighted in his gifts as a companion. Despite his preoccupation with complex and weighty matters, he took contagious delight in the simplicities of good fellowship. He relished good stories and told them well. He was adept with a canoe and with rod and reel, and the rare occasions when he found time to relax usually came when he was in the woods or at a fishing camp or taking a canoe trip with his family, or enjoying the family camp in northern Michigan. In these happy arts of living, companionship, and recreation, he revealed himself as a superb human being, gracious, gay, warm, and understanding, and possessed of that rare key that opens men's hearts. These qualities brought him throughout his life lasting friends who were deeply loyal and who felt instinctively that their lives had been enriched by his friendship.

Underlying all his impressive record of accomplishment were these qualities of his as a man. As one close and dear to him has summed them up, they include a quality of good will, of love of man, that had the mark of universality; a quality of high intelligence that was made fully effective by a disciplined capacity to put that intelligence to use by hard work; a quality of integrity that made it quite unnecessary for him ever to divert any energies to being indirect or devious; and finally, a quality of devotion that made him loyal and dedicated to the people, the institutions, and the goals he felt important and loved.

In all of Karl Compton's career at the Institute and in all that he did for it, he was supported and assisted by Mrs. Compton. She too has helped to make this institution a nobler, happier, and friendlier place, and the combination of Karl and Margaret was a partnership greater than the sum of its parts. We



For their human sympathy, warmth of personality, and direct simplicity, Dr. and Mrs. Compton were popular with students and frequent guests at their gatherings, as this informal view shows.

hope that Mrs. Compton will long maintain her close association with the Institute community, assured that she is beloved and cherished as a member of the Institute's family.

Inscribed in the fireplace in his office is the Latin inscription: "*Alia initia e fine*" — out of each end some new beginning. As it did to an earlier M.I.T. President, this precept appealed to Karl Compton; and if he could do so, he would be the first to urge that we continue as uninterruptedly as possible the activities and the progress of the institution he so brilliantly served and deeply loved. In this spirit, then, I venture to touch briefly on several matters of planning and progress which I feel that he would have liked to have had reported at this opening convocation of the year.

First, may I report the decision made after the close of classes last June to move ahead with plans for a building adequately to house our activities in the field of nuclear science and electronics, and in addition to build a nuclear reactor for peaceful and educational uses.

These decisions were taken at the last meeting of the Corporation Executive Committee over which Karl Compton presided, and since his death, there have been spontaneous suggestions from numerous people that this important next step in the development of M.I.T. should serve as one of the memorials to Dr. Compton. Accordingly, the Executive Committee has recently authorized the building of these two projects as the Karl Taylor Compton Laboratories. Architectural plans are already well along for a building which in size, usefulness, and beauty will stand appropriately and fittingly as a memorial in our midst.

The Karl Taylor Compton Prize Fund, established last year by members and friends of the Boston Stein Club, also serves as a fitting memorial. This fund provides for prizes and grants to students in recogni-

tion and encouragement of outstanding contributions in promoting high standards of achievement and good citizenship within the M.I.T. community. It is hoped that the awards will keep alive and before us Karl Compton's ideals — the ideals of tolerance, individual worth, the right to be different, and working together for the common good.

Among other actions taken during the summer which are of general interest was the decision to construct this fall an outdoor skating rink which takes advantage of the refrigeration equipment provided in the air-conditioning system of the auditorium. It is hoped that this new facility will

be available this winter, and work on it has already started. This together with the new portable basketball and gymnasium floor in Rockwell Cage and a new portable board track are the most significant additions to our athletic and recreational facilities since the construction of Rockwell Cage in 1948. The Executive Committee has authorized architectural studies of permanent apartments for married students to replace the temporary structures in Westgate and Westgate West. We believe it possible to build such apartments in a manner that will free land for fraternity houses, additional dormitories, and enlarged parking space.

The academic year has opened auspiciously with 1,000 freshmen. The fact that we have a larger freshman class than normal, or than was expected, means nonetheless that we welcome its members with enthusiasm, particularly in view of the fact that the class represents an unusually high degree of selectivity and therefore combines quality with quantity. The total enrollment of the Institute seems still to be a changeable figure, but on last report was 5,296.

This year, our Faculty advisory council for freshmen has continued its evolving program of counseling, with effective assistance from a well-organized group of student counselors. One of the achievements of our Freshman Week End was that every freshman had the opportunity to be the guest at dinner of a member of the Faculty and thus to have a personal introduction to the Institute community.

During the summer there were changes in our system of Faculty residents in the dormitories. In Munroe, we have the good fortune to have Ernst Levy, Visiting Professor in the School of Humanities and Social Studies and distinguished pianist, who will serve there as Faculty resident during the first term. In the new apartment in Crafts Hall we will have Dr. and Mrs. John B. Goodenough. We continue to have

(Continued on page 116)

The Writings of Karl Taylor Compton

*His 379 Published Papers Reveal Extraordinary Understanding
of Mankind, His Science, and His Social Institutions*

Compiled by ELEANOR L. BARTLETT

THE published papers of Karl T. Compton fall logically and naturally into two distinct, yet related, categories. Beginning with his first article in the *Physical Review* in February, 1910, Dr. Compton's writings continued to be almost exclusively in the field of physics for the next quarter of a century. His scientific articles, sometimes written in collaboration with other physicists (including such leaders as H. D. Smyth, Irving Langmuir, and the Nobel prize winners O. W. Richardson and Arthur H. Compton) cover a wide range of topics in modern physics.

After his presidential inauguration in June, 1930, the nature of Dr. Compton's publications began to change. For the first few years of his new post, President Compton continued to produce several scientific papers each year. But as presidential duties occupied more and more of his attention there was less time for research, and Dr. Compton's new responsibilities were reflected in his publications. From about 1935 on, his articles dealt more with educational and administrative matters than with research. Yet there was a flavor of science in all his writings whose theme seemed to be taken from the title of one of his own articles — "Put Science to Work."

It has been the privilege of The Review to publish a number of Dr. Compton's articles over the past quarter century. It is now The Review's privilege to list below what is believed to be a complete compilation of the writings of Karl Taylor Compton.

1. A Study of the Wehnelt Electrolytic Interrupter. *Phys.R.*, 30:161-179 (Feb., 1910).

2. The Influence of the Contact Difference of Potential between the Plates Emitting and Receiving Electrons Liberated by Ultraviolet Light on the Measurement of the Velocities of These Electrons. . . . *Princeton University, Ph.D. Thesis* (1911); *Part I, Printed by Taylor and Francis, London*, (1912); *Philos. Mag.*, 23:579-593 (Apr., 1912).

3. The Photoelectric Effect. (with O. W. Richardson) *Philos. Mag.*, 24:575-594 (Oct., 1912); *Phys.R.*, 34:393-396 (May, 1912); *Science*, 35:783-784 (May 17, 1912).

4. Note on the Velocity of Electrons Liberated by Photoelectric Action. *Phys.R.*, 1:382-392 (May, 1913).

5. On the Photoelectric Potentials and Currents from Thin Cathode Films. (with Otto Stuhlmann, Jr.) *Phys.R.*, 1:472-474 (June, 1913).

6. The Photoelectric Effect. II. (with O. W. Richardson) *Philos. Mag.*, 26:549-567 (Oct., 1913).

7. The Photoelectric Properties and Contact Resistances of Thin Cathode Films. (with Otto Stuhlmann, Jr.) *Phys.R.*, 2:199-210 (Sept., 1913).

8. The Photoelectric Properties and Contact Resistances of Thin Cathode Films. II. (with Otto Stuhlmann, Jr.) *Phys.R.*, 2:327-328 (Oct., 1913).

9. Charged Surface Layers Formed on the Electrodes of Vacuum Tubes. (with L. W. Ross) *Phys.R.*, 6:207-212 (Sept., 1915).

10. The Nature of the Ultimate Magnetic Particle. (with E. A. Trousdale) *Science*, 41:611 (Apr. 23, 1915); *Phys.R.*, 5:315-318 (Apr., 1915).

11. Temperature Changes Accompanying the Adiabatic Compression of Steel. (with D. B. Webster) *Phys.R.*, 5:159-166 (Feb., 1915).

12. Application of the Electron Theory of Gaseous Dielectrics to the Calculation of Minimum Ionizing Potentials. *Phys.R.*, 8:412-416 (Oct., 1916).

13. Diffusion Cells in Ionized Gases. (with E. B. Wood and O. A. deLong) *Philos. Mag.*, 32:499-504 (Nov., 1916).

14. The Mean Free Path of an Electron in a Gas and Its Minimum Ionizing Potential. *Phys.R.*, 8:386-390 (Oct., 1916).

15. The Nature of the Collisions of Electrons with Gas Molecules. (with J. M. Benade) *Phys.R.*, 8:449-464 (Nov., 1916).

16. The Temperature Coefficient of Contact Potential. *Phys.R.*, 7:209-214 (Feb., 1916).

17. Theory of Ionization by Collision. I. The Distribution of Velocities of the Electrons. *Phys.R.*, 7:489-496 (Apr., 1916); II. Case of Inelastic Impact. *Phys.R.*, 7:501-508 (May, 1916); III. Case of Elastic Impact. *Phys.R.*, 7:509-517 (May, 1916).

18. The Passage of Photo-Electrons through Metals. (with L. W. Ross) *Phys.R.*, 9:558-559 (June, 1917).

19. Temperature Coefficient of Contact Potential. A Rejoinder. *Phys.R.*, 9:78-79 (Jan., 1917).

20. Theory of Ionization by Partially Elastic Collisions. *Phys.R.*, 10:80-83 (July, 1917).

21. Elasticity of Impact of Electrons with Gas Molecules. (with J. M. Benade) *Phys.R.*, 11:184-202 (Mar., 1918).

22. Theory of Ionization by Collision. IV. Cases of Elastic and Partially Elastic Impact. (with J. M. Benade) *Phys.R.*, 11:234-240 (Mar., 1918).

23. An Addition to the Theory of the Quadrant Electrometer. (with A. H. Compton) *Phys.R.*, 13:288 (Apr., 1919).

24. The Passage of Photoelectrons through Metals. (with L. W. Ross) *Phys.R.*, 13:374-391 (May, 1919).

25. A Possible Relation between the Resonance Potential and Specific Inductive Capacity of a Metallic Vapor and Its Properties in the Solid State. *Phys.R.*, 13:295 (Apr., 1919).

26. A Sensitive Modification of the Quadrant Electrometer. (with A. H. Compton) *Phys.R.*, 14:85-98 (Aug., 1919).

27. The Effect of Fluorescence and Dissociation on the Ionizing Potential of Iodine Vapor. (with H. D. Smyth) *Phys.R.*, 16:501-513 (Dec., 1920).

28. Excitation of the Spectrum of Helium. (with E. G. Lilly) *Astrophys.J.*, 52:1-7 (July, 1920).

29. Fluorescence, Dissociation and Ionization in Iodine Vapor. (with H. D. Smyth) *Science*, 51:571-572 (June 4, 1920).

30. Ionization and Production of Radiation by Electron Impacts in Helium Investigated by a New Method. *Philos. Mag.*, 40:553-568 (Nov., 1920).

31. Low Voltage Arc in Helium. (with P. S. Olmstead and E. G. Lilly) *Phys.R.*, 15:545 (June, 1920).

32. The Minimum Arcing Voltage in Helium. (with E. G. Lilly and P. S. Olmstead) *Phys.R.*, 16:282-289 (Oct., 1920).

33. On Ionization by Successive Impacts, and Its Action in Low Voltage Arcs. *Phys.R.*, 15:476-486 (June, 1920).

34. Radiation and Ionization in Helium by 20-Volt Impacts. *Phys.R.*, 15:131-132 (Feb., 1920).

35. Note on the Radiating and Ionizing Potentials of Hydrogen. (with P. S. Olmstead) *Phys.R.*, 17:45-53 (Jan., 1921).

36. Arc Spectra and Ionization Potentials in Dissociated Gases. *Am.Phil.Soc.Proc.*, 61:212-226 (1922).

37. Effect of the Initial Emission Velocities of Electrons on the Minimum Arcing Voltage in Gases. (with Y. T. Yao) *Phys.R.*, 20:105 (July, 1922).

38. Note on the Distribution of Range of Recoil Atoms. *Phys.R.*, 19:233-236 (Mar., 1922).
39. Physics of the Three-electrode Bulb. *Frank.Inst.J.*, 194: 29-48 (July, 1922).
40. Recent Discoveries and Theories Relating to the Structure of Matter. *Smithsonian Inst.Publ.Repts.*, 1922:145-156; *Princeton Lectures*, No. 10 (June, 1922).
41. Remarks on Ionization by Cumulative Action. *Philos. Mag.*, 43:531-537 (Mar., 1922).
42. A Test of Theories of Cumulative Ionization. *Phys.R.*, 19:534 (May, 1922).
43. Theory of Ionization by Cumulative Action and the Low Voltage Arc. *Phys.R.*, 19:421 (Apr., 1922); *Phys.R.*, 20:283-299 (Oct., 1922).
44. A Tungsten Furnace for Experiments on Dissociation and Ionization. *Opt.Soc.Am.J. & R.Sci.Instr.*, 6:910-912 (Oct., 1922).
45. The Cause of Ionization in the Carbon Arc. *Phys.R.*, 21:476 (Apr., 1923).
46. Chemical and Spectroscopic Properties of Excited Atoms and Reversible Effects of Electron Impacts in Gases. *Opt.Soc. Am.J. and R.Sci.Instr.*, 7:955-971 (Nov., 1923).
47. Ionization and Activation of Gases. *Trans.Am.Electrochem.Soc.*, 44:117-125; Disc.125-126 (1923).
48. Mobilities of Electrons in Gases. *Phys.R.*, 22:432-444 (Nov., 1923).
49. Note on Bräuer's Theory of the Function of the Cathode in Electric Arcs. (with A. Trowbridge) *Opt.Soc.Am.J. and R.Sci.Instr.*, 7:321-325 (Apr., 1923).
50. On the Motions of Electrons in Gases. *Phys.R.*, 22:333-346 (Oct., 1923).
51. The Origin of Ions in the Unsustained Glow Discharge. (with T. E. Foulke) *Gen.Elec.R.*, 26:755-757 (Nov., 1923).
52. Radiation Potentials of Atomic Hydrogen. (with P. S. Olmstead) *Phys.R.*, 22:559-565 (Dec., 1923).
53. Some Properties of Resonance Radiation and Excited Atoms. *Philos.Mag.*, 45:750-760 (Apr., 1923).
54. Theory of the Electric Arc. *Phys.R.*, 21:266-291 (Mar., 1923).
55. The Abnormal Low Voltage Arc. (with C. H. Eckart) *Phys.R.*, 24:97-112 (Aug., 1924).
56. The Band Spectrum of Mercury and the Dissociation of Hydrogen by Excited Mercury Atoms. (with L. A. Turner) *Phys.R.*, 23:768 (June, 1924).
57. The Band Spectrum of Mercury and the Dissociation of Hydrogen Molecules by Excited Mercury Atoms. (with L. A. Turner) *Philos.Mag.*, 48:360-363 (Aug., 1924).
58. Critical Potentials. (with F. L. Mohler) *Nat.Research Council Bul.*, 9, Pt. 1, No. 48 (Sept., 1924).
59. Dissociation of Hydrogen and Nitrogen by Excited Mercury Atoms (with O. S. Duffendack) *Phys.R.*, 23:109 (Jan., 1924); *Phys.R.*, 23:583-592 (May, 1924).
60. The Electric Moment of Gaseous HCl and HBr Molecules. (with C. T. Zahn) *Phys.R.*, 23:781-782 (June, 1924).
61. Excited Atoms in the Striated Glow Discharge in Mercury Vapor. (with L. A. Turner and W. H. McCurdy) *Phys.R.*, 23:776 (June, 1924).
62. Explanation of Abnormal Low Voltage Arcs. (with C. H. Eckart) *Nature*, 114:51 (July 12, 1924).
63. Oscillations in Low Voltage Arcs. (with C. H. Eckart) *Phys.R.*, 23:554 (Apr., 1924).
64. Oscillations in the Low Voltage Helium Arc. (with C. H. Eckart) *Science*, 59:166-168 (Feb. 15, 1924).
65. A Possible Explanation of the Behaviour of the Hydrogen Lines in Giant Stars. (with H. N. Russell) *Nature*, 114:86-87 (July 19, 1924).
66. Theory and Experiments Relating to Striated Glow Discharge in Mercury Vapor. (with L. A. Turner and W. H. McCurdy) *Phys.R.*, 24:597-615 (Dec., 1924).
67. Theory of Normal and Abnormal Low Voltage Arcs. (with C. H. Eckart) *Phys.R.*, 23:769 (June, 1924).
68. Absorption and Emission Spectra of the Geissler Discharge in Mercury Vapor and in Mixtures of Mercury and Hydrogen. (with L. A. Turner) *Phys.R.*, 25:606-612 (May, 1925).
69. Absorption of a Line of the Principle Series of Singly Ionized Atomic Mercury. (with L. A. Turner) *Phys.R.*, 25:613-617 (May, 1925).
70. Absorption of the Enhanced Mercury Line 1942.5 by Ionized Mercury Vapor. (with L. A. Turner) *Phys.R.*, 25:238-239 (Feb., 1925).
71. The Diffusion of Electrons against an Electric Field in the Non-Oscillatory Abnormal Low Voltage Arc. (with C. H. Eckart) *Phys.R.*, 25:139-146 (Feb., 1925).
72. *Ionisierungs-und Anregungsspannungen:übersetzt von R. Suhrmann. Teil 1. Methoden zur Bestimmung kritischer Potentiale.* Fortschr.Chem.Physik u.physik.Chem. 18:291-351 (1925).
73. Low Voltage Arc Oscillations in Nitrogen and in Mixtures of Hydrogen and Nitrogen. (with C. H. Eckart and C. T. Kwei) *Phys.R.*, 25:889 (June, 1925).
74. The Nature of the Iodine Line 2062A. (with L. A. Turner) *Phys.R.*, 25:791-794 (June, 1925).
75. Non-Oscillatory Abnormal Low Voltage Arcs with Reversed Electric Fields Caused by Ion Diffusion. (with C. H. Eckart) *Phys.R.*, 25:111 (Jan., 1925).
76. Note on Cumulative Ionization in Stellar Atmospheres. *Monthly Notices Royal Astronomical Society*, 85:547-548 (1925).
77. Note on Production of Atomic Nitrogen and Its Arc Spectrum. *Phil.Mag.*, 50:512-516 (Sept., 1925).
78. Physical Optics. Report of the Optical Society of America. Progress Committee for 1923-1924. (K.T.C. committee member) *Opt.Soc.Am.J. and R.Sci.Instr.*, 10:549-560 (May, 1925).
79. Probabilities of Ionization by Electron Impacts in Hydrogen and Argon. (with C. C. Van Voorhis) *Phys.R.*, 25:245 (Feb., 1925).
80. Probability of Ionization of Gas Molecules by Electron Impacts. (with C. C. Van Voorhis) *Phys.R.*, 26:436-453 (Oct., 1925).
81. Departures from Ohm's Law and Theories of Metallic Conduction. *Phys.R.*, 27:249 (Feb., 1926).
82. Dielectric Constant and Molecular Structures. *Science*, 63:53-58 (Jan. 15, 1926); *Nature*, 117:361-362 (Mar. 6, 1926).
83. The Excited States of Atoms. *Sci.Am.*, 135:330-331 (Nov., 1926).
84. Interpretation of Deviations from Ohm's Law. *Nat.Acad. Sci.Proc.*, 12:548-551 (Sept. 15, 1926).
85. Physical Optics. Report of the Optical Society of America. Progress Committee for 1924-1925. (K.T.C. committee member) *Optical Soc.Am.J. and R.Sci.Instr.*, 12:587-611 (June, 1926).
86. Probability of Ionization of Gas Molecules by Electron Impacts. II. Critique. (with C. C. Van Voorhis) *Phys.R.*, 27:724-731 (June, 1926).
87. Reconciliation of Experiments on Probability of Ionization by Electron Impact (with C. C. Van Voorhis) *Phys.R.*, 27:516 (Apr., 1926).
88. Soft X-Rays: Improvements in Technique and New Results for C, Cu and W. (with C. H. Thomas) *Phys.R.*, 28:601-612 (Oct., 1926).
89. Characteristics of the Electric Arc. *Elec.World*, 90:64-67 (July 9, 1927).
90. The Electric Arc. *Am.Inst.E.E.J.*, 46:1192-1200 (Nov., 1927).
91. Heats of Condensation of Electrons and Positive Ions of Molybdenum. (with C. C. Van Voorhis) *Phys.R.*, 29:909 (June, 1927).
92. Heats of Condensation of Positive Ions and the Mechanism of the Mercury Arc. (with C. C. Van Voorhis) *Nat.Acad. Sci.Proc.*, 13:336-341 (May 15, 1927).
93. A Mechanical Maxwell Demon. (with J. L. Costa and H. D. Smyth) *Phys.R.*, 30:349-353 (Sept., 1927).
94. Specialization and Cooperation in Scientific Research. *Science*, 66:435-442 (Nov. 11, 1927).
95. A Theory of the Normal Cathode Fall in Glow Discharges. (with P. M. Morse) *Phys.R.*, 29:909 (June, 1927); *Phys.R.*, 30:305-317 (Sept., 1927).
96. Extreme Ultraviolet Spectra Excited by Controlled Electron Impacts. (with J. C. Boyce) *Franklin Inst.J.*, 205:497-513 (Apr., 1928); *Phys.R.*, 31:708-709 (Apr., 1928).
97. Extreme Ultra-Violet Spectrum of Argon Excited by Controlled Electron Impacts. (with J. C. Boyce and H. N. Russell) *Phys.R.*, 32:179-185 (Aug., 1928).
98. Heats of Condensation of Electrons on Platinum in Ionized He, Ne and A. (with C. C. Van Voorhis) *Phys.R.*, 31:1122 (June, 1928).

99. Introduction in *What Is Life?*² by (Mrs.) Augusta Gaskell (Springfield, Ill.: C. C. Thomas, 1928).

100. Review of *Einführung in die Physik der Gasentladungen* by Rudolf Seeliger (Leipzig: J. A. Barth, 1927); *Phys.R.*, 32: 840 (Nov., 1928).

101. The Spark Spectrum of Neon. (with H. N. Russell and J. C. Boyce) *Nature*, 121:357 (Mar. 10, 1928); *Nat.Acad.Sci. Proc.*, 14:280-283 (Mar. 15, 1928).

102. The Spark Spectrum of Neon and Argon. (with H. N. Russell and J. C. Boyce) *Phys.R.*, 31:709 (Apr., 1928).

103. Spectra of Nitrogen and Its Active States. (with J. C. Boyce) *Science*, 68:600 (Dec. 14, 1928).

104. Arc Spectrum of Nitrogen in the Extreme Ultra Violet. (with J. C. Boyce) *Phys.R.*, 33:145-153 (Feb., 1929).

105. Extreme Ultra-Violet Spectra of Ne and A Excited by Electrodeless Ring Discharge. (with J. C. Boyce and J. L. Nickerson) *Phys.R.*, 33:1085 (June, 1929).

106. Higher Spark Spectra of Neon and Argon in the Extreme Ultra-Violet. (with J. C. Boyce) *Nat.Acad.Sci.Proc.*, 15: 656-658 (Aug. 15, 1929).

107. Investigations in the Field of Spectroscopy, Conducted at Princeton University. *Carnegie Inst.Wash.Yearbook*, 29:404-407 (1929-1930).

108. The Metastable States of Atomic Nitrogen. (with J. C. Boyce) *Phys.R.*, 33:115 (Jan., 1929).

109. The Anatomy of X-Rays. New Uses for the Rays, the Wave-Length of which Approximates the Diameter of an Atom. *Tech.R.*, 33:131 (Dec., 1930).

110. Contributions of Professor Elihu Thomson to Science and Engineering. *Gen.Elec.R.*, 33:666-669 (Dec., 1930).

111. Electrical Discharges in Gases. (with I. Langmuir) Part I. Survey of Fundamental Processes. *Rs.Mod.Phys.*, 2:123-242 (Apr., 1930); *General Electric Company Research Lab. Reprint* 533 (June, 1930); *M.I.T. Physics Dept. Contribution*, Series 3, No. 1.

112. Heating of a Cathode by Positive Gas Ions and Their "Accommodation Coefficient." (with C. C. Van Voorhis) *Phys.R.*, 35:1438 (May, 1930).

113. Heats of Condensation of Electrons on Several Metals in Several Ionized Gases. (with C. C. Van Voorhis) *Phys.R.*, 36:1435-1439 (Nov. 1, 1930).

114. Inauguration of . . . address. *Tech.R.*, 32:436 (July, 1930); *Science*, 71:593-596 (June 13, 1930).

115. An Interpretation of Pressure and High Velocity Vapor Jets at Cathodes of Vacuum Arcs. *Phys.R.*, 36:706-708 (Aug. 15, 1930).

116. Investigations in the Field of Spectroscopy Conducted at Princeton University. *Carnegie Inst.Wash.Yearbook*, 30:452-454 (1930-1931).

117. Laboratory Romance. *Stone and Webster J.*, 48:21-24 (Jan., 1931).

118. Accommodation Coefficients of Positive Ions of Argon, Neon and Helium. (with C. C. Van Voorhis) *M.I.T. Physics Dept. Contribution*, Series 3, No. 10; *Phys.R.*, 37:1596-1610 (June 15, 1931).

119. Adventures with Electricity in a Partial Vacuum. *M.I.T. Physics Dept. Contribution*, Series 3, No. 3; *Sci.Mo.*, 32:69-72 (Jan., 1931).

120. An American Faraday. *Tech.R.*, 33:183 (Jan., 1931).

121. The Death of Chairman Stratton . . . Tribute. *Tech.R.*, 34:84-85 (Nov., 1931).

122. Electrical Discharges in Gases. (with I. Langmuir) Part 2. Fundamental Phenomena in Electrical Discharges. *Rs.Mod.Phys.*, 3:191-257 (Apr., 1931); *M.I.T. Physics Dept. Contribution*, Series 3, No. 2.

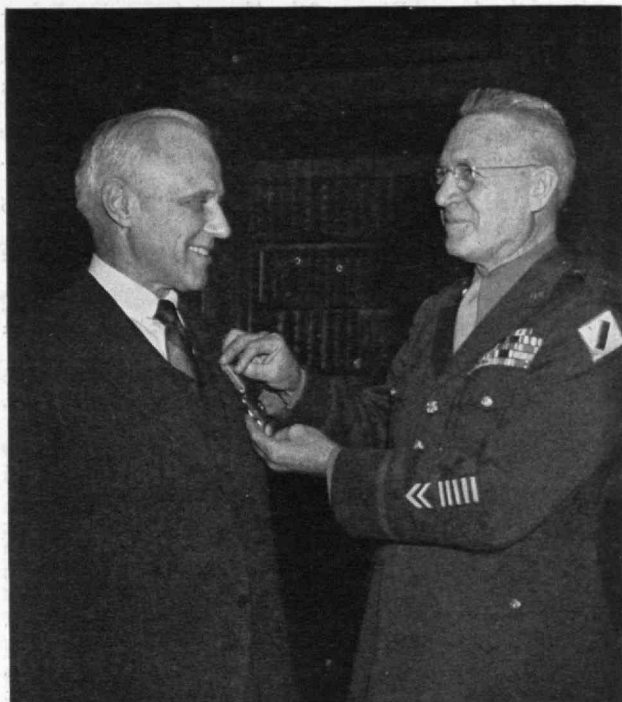
123. Emission of Electrons from Metals. *Western Soc.E.J.*, 36:137-148 (June, 1931); *M.I.T. Physics Dept. Contribution*, Series 3, No. 9.

124. Engineering Administration. *Combustion*, 2:15 (Apr., 1931).

125. Equilibrium Theory of the Cathode Spot in Mercury Arcs. *Science*, 73:504 (May 8, 1931); *M.I.T. Physics Dept. Contribution*, Series 3, No. 8.

126. On the Fraction of Current Carried by Electrons at the Cathode of a Mercury Arc. *Phys.R.*, 37:468-469 (Feb. 15, 1931).

127. On the Theory of the Mercury Arc. *Phys.R.*, 37:1077-1090 (May 1, 1931); *M.I.T. Physics Dept. Contribution*, Series 3, No. 31.



International News Photo

Many honors, including about three dozen honorary doctorates, came to Dr. Compton throughout his active life. But probably few are as symbolic of his contributions to science, education, and to the nation as a whole as the Medal for Merit which he received from Lieutenant General O. W. Griswold on April 2, 1946.

128. Potential Drop and Ionization at Mercury Arc Cathode. (with E. S. Lamar) *Phys.R.*, 37:1069-1076 (May 1, 1931); *M.I.T. Physics Dept. Contribution*, Series 3, No. 30.

129. Research in High Vacuum Spectroscopy. *Carnegie Inst.Wash.Yearbook*, 31:334-335 (1931-1932).

130. Stratton: "We Mark the Passing of a Great Man." *Research Lab.Record*, 1:41-42 (1931).

131. Taking Stock in 1931. *Tech Eng.News*, 12:153 (Oct., 1931).

132. Your Nimble Servant—the Electron. *Elec.Eng.*, 50:192-194 (Mar., 1931).

133. Accommodation Coefficient of Gaseous Ions at Cathodes. *Nat.Acad.Sci.Proc.*, 18:705-711 (Dec. 15, 1932); *M.I.T. Physics Dept. Contribution*, Series 3, No. 63.

134. Battle of the Alchemists. *M.I.T. Physics Dept. Contribution*, Series 3, No. 61 (1932).

135. Calvin Winsor Rice—His Work in Professional-Society Organization. *Mech.Eng.*, 54:5-8 (Jan., 1932).

136. Cultural Aspects of Engineering Education. *J.Eng. Educ.*, 23:69-76 (Oct., 1932).

137. Edison's Laboratory in War Time. *Science*, 75:70-71 (Jan. 15, 1932).

138. Educational Objectives at M.I.T. *Tech.R.*, 34:242 (Mar., 1932).

139. The Electron. *Radio Eng.*, 12:26-27 (Aug., 1932).

140. The Future of Engineering. Its Significance as a Social Force. *Tech.R.*, 34:163 (Jan., 1932).

141. The George Eastman Research Laboratories for Physics and Chemistry. *Science*, 75:472-479 (May 6, 1932); *M.I.T. Physics Dept. Contribution*, Series 3, No. 42.

142. George Eastman: Obituary. *Science*, 75:402-405 (Apr. 15, 1932).

143. Interpretation of Phenomena Due to Accommodation Coefficient of Ions at Cathode Surfaces. *M.I.T. Physics Dept. Contribution*, Series 3, No. 64; *Science*, 76:518-519 (Dec. 2, 1932).

144. Long-Range Budgeting of Public Capital Expenditures. *Annals Amer.Acad.*, 162:127-132 (July, 1932).

145. M.I.T.: Its Past, Present, and Future. A Letter from Karl Taylor Compton to Alumni of the Institute on the Oc-

casion of the Annual Dinner of the Alumni Association, February 6, 1932. (Cambridge, Mass.: M.I.T., 1932).

146. The New Spectroscopy Laboratory of the Massachusetts Institute of Technology. *Physics*, 2:205-210 (Apr., 1932); *M.I.T. Physics Dept. Contribution*, Series 3, No. 37.

147. Research in High Vacuum Spectroscopy. *Carnegie Inst. Wash. M.I.T. Physics Dept. Contribution*, Series 3, No. 63. *Yearbook*, 32:344-345 (1932-1933).

148. Three Adventures in Physics. *Tech Eng. News*, 13:85 (Oct., 1932).

149. Tribute to Samuel Wesley Stratton. *Am. Scholar*, 1:105-7 (Jan., 1932).

150. Battle of the Alchemists. *Smithsonian Inst. Publ. Repts.*, 1933:269-282; *Elec. Eng.*, 52:75-80 (Feb., 1933); *Tech. R.*, 35:165 (Feb., 1933).

151. The Century of Progress—What Next? *Mech. Eng.*, 55:478-480 (Aug., 1933); *Western Soc. Eng. J.*, 38:197-202 (Aug., 1933).

152. The Electrostatic Generation of High Voltages for Nuclear Investigations. (with R. J. Van de Graaff and L. C. Van Atta) *Phys. R.*, 43:382 (Mar. 1, 1933).

153. The Electrostatic Production of High Voltage for Nuclear Investigations. (with R. J. Van de Graaff and L. C. Van Atta) *M.I.T. Physics Dept. Contribution*, Series 3, No. 70; *Phys. R.*, (Feb. 1, 1933).

154. Elihu Thomson: Some of His Mechanical Inventions. *Mech. Eng.*, 55:225-228 (Apr., 1933).

155. High Voltage. *Wash. Acad. Sci. J.*, 23:277-297 (June 15, 1933); *M.I.T. Physics Dept. Contribution*, Series 3, No. 85; *Smithsonian Inst. Publ. Repts.*, 1933:249-267; *Science*, 78:19-24; 48-52 (July 14, 1933); (July 21, 1933).

156. In Honor of Professor Einstein. Greeting . . . *Science*, 77:271-272 (Mar. 17, 1933).

157. Legislation for Reduction and Relief of Unemployment. Chapter XV in *Stabilization of Employment* . . . ed. by C. F. Roos (Bloomington, Ind.: The Principia Press, Inc., 1933).

158. Looking Ahead at the Institute of Tomorrow—Trends and Objectives. *Tech Eng. News*, 14:65 (May, 1933).

159. Massachusetts Plan for Unemployment Reserves. *Am. Labor Leg. R.*, 23:96-99 (June, 1933).

160. The National Academy of Science, Address of Welcome. *Science*, 78:515-518 (Dec. 8, 1933).

161. Report. Science Advisory Board. K.T.C. chairman. (1) (Washington, D.C.: Board, 1933-1934).

162. Research in High Vacuum Spectroscopy. *Carnegie Inst. Wash. Yearbook*, 33:329-332 (1933-1934).

163. The Significance of Professor Thomson's Work in the Development of Electrical Engineering. In *Elihu Thomson Eightieth Birthday Celebration at the Massachusetts Institute of Technology* (Cambridge, Mass.: The Technology Press, 1933); *Science*, 77:415-418 (May 5, 1933); *M.I.T. Physics Dept. Contribution*, Series 3, No. 80.

164. Technology's Answer to Technocracy. Chapter IV in *For and Against Technocracy: a Symposium*, ed. by J. G. Frederick (New York: Business House, 1933).

165. A Test of the Classical "Momentum Transfer" Theory of Accommodation Coefficients of Ions at Cathodes. (with E. S. Lamar) *M.I.T. Physics Dept. Contribution*, Series 3, No. 95; *Phys. R.*, 43:1054 (June 15, 1933); *Phys. R.*, 44:338-344 (Sept. 1, 1933).

166. A Broad Range Vacuum Spectrograph for the Extreme Ultra-Violet. (with J. C. Boyce) *M.I.T. Physics Dept. Contribution*, Series 3, No. 130; *R. Sci. Instr.*, 5:218-224 (June, 1934).

167. The Causes of War. *Tech. R.*, 36:295 (May, 1934).

168. Distribution of Funds for Research. *Science*, 80:526 (Dec. 7, 1934).

169. Moratorium on Science Would Be Fatal to Recovery. (with R. A. Millikan and F. B. Jewett) *Elec. World*, 103:324-326 (Mar. 3, 1934).

170. The Natural Sciences in National Planning. Is Half of One Per Cent of the Federal Budget Enough? *Tech. R.*, 36:344-346 (July, 1934).

171. Physics in National Planning. *R. Sci. Instr.*, 5:235-236 (July, 1934).

172. Research in High Vacuum Spectroscopy. *Carnegie Inst. Wash. Yearbook*, 34:346-347 (1934-1935).

173. The Road to Achievement in Research. *Tech. R.*, 37:14 (Oct., 1934).

174. Report. Science Advisory Board. K.T.C. chairman. (2) (Washington, D.C.: Board, 1934-1935).

175. Science and Prosperity. *Science*, 80:387-394 (Nov. 2, 1934).

176. Science Makes Jobs. *Sci. Mo.*, 38:297-300 (Apr., 1934).

177. Science, Your Obedient Servant. Address delivered at the 28th annual convention of the Association of Life Insurance Presidents at New York, Dec. 13, 1934.

178. A Special Theory of Cathode Sputtering. (with E. S. Lamar) *M.I.T. Physics Dept. Contribution*, Series 3, No. 157; *Science*, 80:541 (Dec. 14, 1934).

179. Charles Elwood Mendenhall. *Science*, 82:317-318 (Oct. 4, 1935).

180. Federal Participation in Scientific Work: Address to the convention of the Special Libraries Association, Hotel Statler, June 11, 1935. (Cambridge, Mass.: Author, 1935) (typewritten).

181. The Government's Responsibilities in Science. *Sigma Xi Quarterly*, 23:91-102, 117 (Sept., 1935); *Science*, 81:347-355 (Apr. 12, 1935); *Vital Speeches*, 1:425-431 (Apr. 8, 1935).

182. Ground Water and Forest Belt. *Science*, 81:72 (Jan. 18, 1935).

183. High Current Ion Sources for Nuclear Investigations. (with E. S. Lamar and E. W. Samson) *M.I.T. Physics Dept. Contributions*, Series 3, No. 205; *Phys. R.*, 48:886-892 (Dec. 1, 1935).

184. A Message from President Compton. *Tech. R.*, 37:315 (May, 1935).

185. More for Your Money: Science Points the Way. *Vital Speeches*, 1:671-673 (July 15, 1935).

186. New Worlds to Conquer. *Tech. R.*, 37:370 (July, 1935).

187. Objectives Old and New at M.I.T. *Tech. R.*, 38:57 (Nov., 1935).

188. Patterns in Our Ways of Thinking. Address before the graduate convocation, Brown University, June 15, 1935. *Brown University, Papers XII; Sch. and Soc.*, 42:209-215 (Aug. 17, 1935).

189. A Plan for Post-Doctorate Fellowships. *Association of American Universities. Journal of Proceedings and Addresses of the 37th Annual Conference*, 1935:153-158; *Sch. and Soc.*, 42:693-697 (Nov. 23, 1935).

190. Put Science to Work! The Public Welfare Demands a National Scientific Program. *Tech. R.*, 37:133 (Jan., 1935).

191. Report of the Science Advisory Board. *Science*, 81:15 (Jan. 4, 1935).

192. Spectroscopic Investigations in the Extreme Ultra-Violet. (with J. C. Boyce) *Science*, 81:421 (May 3, 1935).

193. Useful Volts. *Barnwell Bulletin*, 13:21-38 (Sept., 1935).

194. Investment for Public Welfare. *Science*, 83:507-511 (May 29, 1936).

195. *Let's Go Partners and †Science in an American Program for Social Progress. (New York: The Chemical Foundation, Inc., 1936). The Deserted Village, No. 11. *Reprinted from the *Country Home* (June, 1936); †Address delivered before National Industrial Conference Board, May 28, 1936, New York.

196. M.I.T. Men Work. *Letters*, 3:1-2 (May 11, 1936).

197. New Objectives for Technology. *Tech. R.*, 39:15 (Nov., 1936).

198. The Public Interest: Characteristics of the Utilities, Private versus Public Ownership, Research and Development, Growth of Social Responsibility. In *A Discussion of the Principles Involved in the Relation of Government to the Electric Power Industry*. Investment Bankers Association of America (1936); *Investment Bankers Association of Am. Proceedings*, 1936:229-243.

199. Responsibility of Engineering. *Science*, 84:393-394 (Oct. 30, 1936).

200. Role of Science. Elements of an American Program for Social Progress. *National Industrial Conference Board Trans.* (May, 1936).

201. Science Advisory Service to the Government. *Sci. Mo.*, 42:30-39 (Jan., 1936).

202. Science and Opportunity. *Vital Speeches*, 2:653-656 (July 15, 1936).

203. Science in an American Program for Social Progress. *Educ. Rec.*, 17:528-540 (Oct., 1936).

(Continued on page 98)

Some Observations on EXECUTIVE DEVELOPMENT

*After Progressive Concern with Financial Survival,
Production, and Marketing, Management Now Emphasizes
the Long-Neglected Problem of Executive Development*

By EDWARD McSWEENEY

WHAT you see when you look at something depends on where you stand. Christmas, for example, is a holy day to the religious, a holiday to the average layman, a bonanza to the children, and Sales Opportunity Number One to the retail merchant. Television spells entertainment to millions, employment to thousands, and a sales-building device to companies which use it for advertising.

Not long ago the author watched a photographer photograph a book for the publisher's advertising. He changed the lights, raised and lowered his camera, inserted wooden blocks beneath the binding. He tried this way and that for hours, until the job was done to his satisfaction. I add only parenthetically that the book was the *Holy Bible* — which has been seen from many angles, inside and out, since Gutenberg's day, and even before.

From what vantage point should we view executive development? Your thoughts about it depend on who you are and where you are in the business world. The large employer, for whom most of the literature on the subject has been written, regards it as a potential means of filling inevitable vacancies. The director or large investor weighs it as a form of insurance against mortality within — and of — the corporation. Executives now filling the more desirable posts range in their reactions from genuinely interested co-operation to toleration or contempt for a passing fancy or a zany idea. The fledgling from college looks on it as a golden ladder up which to climb, should the mantle of preferment fall on him.

On the outside, looking in, the School of Business Administration sees, in executive development, a logical projection of its curriculum, and there are some management consultants who grasp it as a handy device for improving everything from company policies and internal organization to front-line supervision.

The validity of any framework traces from its need. Utility determines almost everything. How badly do we need it? Do we need it now? Can it be deferred? Is it worth the cost? What form will produce the best results? All these questions are being asked about executive development.

There is no gainsaying the over-all need for developing future business leaders. Our population is booming, our economy is burgeoning. Forecasters are bandying about figures of \$600 billion gross national product within 10 years, as compared with little more than half that today. Our peacetime appetite for manufactured products is insatiable, and our security

commitments and requirements seem astronomical. Everything points to a continued expansion of our material needs. The fulfillment of these material needs involves a comparable expansion of man power, machinery, and the management and marketing knowledge of how to keep the pipe lines filled. Where is the management coming from? Unless we have good managers, and more of them than ever before in our history, we shall be in the position of lacking the products as well.

Because their needs are most pressing, big companies have been grappling with the problem for many years. Hence, the wide-scale programs, like those of the General Electric Company, which absorbs 1,000 college men every year and puts them through a 15-month training course that is reputed to cost the company \$5,000,000 annually. General Electric Company has a full-time faculty of 250, plus all the paraphernalia of textbooks, examinations, catalogues, and even an alumni magazine.

But not all big companies are following the lead set by General Electric Company. The Ford Motor Company tried a similar program for awhile, then cut back its executive development budget from \$375,000 a year in 1950 to around \$24,000 today. Instead of offering a formal program of its own, the Ford Motor Company hires college graduates to fit particular vacancies. From there on, after a minimum of orientation and fussing over, the newcomer gets one lecture a month — on his own time. The General Motors Corporation leans over backward to avoid giving newcomers any idea that an inside track to executive status exists.

When such opposite opinions prevail on the summit of the corporate world, is it any wonder that differences exist in the foothills and half the way up?

Small and middle-size companies are the traditional training ground for Big Business; they represent the sand lots and bush leagues that the talent men have to scout. But things have been happening to make the pickings thinner, and this is one reason why some of the big industrialists are building fifth and sixth teams of their own. Additional factors that emphasize this trend include:

1. The need for man power by the nation's military establishment. This exerts a prior claim and diverts millions of eligibles away from the stream of civil employment and returns them with specific skills and inclinations at an age — and often with family responsibilities — which makes trainee status unattractive.



David W. Corson from A. Devaney, N.Y.

2. The pressure of defense production, which puts a premium on technical skills. Thousands of youths who otherwise would come up through the liberal arts, through accounting, or the broader phases of engineering, now emerge from college as technicians in electronics, aerodynamics, pure physics, and so on. They merely shift from the university laboratory or drafting board to a corporate counterpart in a defense industry.

3. Pension plans, group insurance, and other forms of security. Such benefits tend to anchor an increasing number of young men to the company escalator. Every year, that one hangs on, enlarges the sacrifice involved in changing jobs.

4. Diversification, which more and more firms are embracing. It enhances the premium on specific skills. In theory, a good case could be pleaded the opposite way — that broadening the horizon of corporate effort increases the need for broader-gauge men. But when a metalworking concern adds a line of computers, its most immediate need is for experts who can build and improve them — not for new policy makers.

Faced with these conditions, many middle-size organizations follow the line of least resistance — and buy whole companies instead of hiring individual men. At one fell swoop they add whole corps of specialists, plus operating plants, patent rights, distribution setups, and long-established good will. No wonder mergers are the rule, rather than the exception, today!

This happens within industries, as well. When Conrad Hilton acquired the Statler system he added not only a string of profitable properties across the nation, but also a dynamic organization of people whose operating talents are celebrated throughout the hotel field, plus a selling network second to none. This points up the truth that our business and industrial giants are competing, basically, for men.

What we are witnessing today is the greatest man hunt in history, a beneficent, but nonetheless rapacious struggle for executive specialists, and particularly for those who possess the qualities of leadership. Today's industrial revolution involves people far more than it does machines. There is a growing realization that our most valuable natural resource is our scientific and managerial man power. Here is one asset that continues to grow but which must be cultivated, harnessed, and put to increasingly productive ends.

E. P. Brooks, '17, Dean of M.I.T.'s School of Industrial Management, touched on this important point during his Alumni Day address when he said:

With all the tools of modern industry and with all of the great achievements which management can bring into being, let us not lose sight of the fact that our most important resource is man himself; he is at the core of all of the many problems that we face. Man is a creative animal, and he derives his greatest satisfaction from partaking of his creative instinct. We must recognize this fact and feed him and encourage him to develop this creative instinct. It seems to me that decentralization provides the most effective mechanism by which the opportunities for creative accomplishments of men can be made available to and distributed among the greatest number of persons.*

The close of World War II marked the beginning of a dramatic rise in interest in planned executive development. A thoughtful few had been warning that science — to quote M.I.T.'s eloquent reminder — had outstripped the humanities. Events at Hiroshima proved that we knew more about making atomic bombs than about applying atomic energy for the good of mankind.

A quick look back over the business road we have traveled shows the stages we passed through. Let us call the first stage the Financial Era, when there were plenty of frontiers to be exploited. Next came the Manufacturing Era, set off by World War I, when we really learned to employ the techniques of mass production. The Roaring Twenties were an era of selling, which ran wild until 1929.

Ever since, throughout the eras of depression, wars, New Deals, and the Common Man, we have been groping toward a new period, which may be called the Era of Management. We are in it today, up to our armpits. Soon we must swim. Eventually we must soar. But we will rise to the skies only when we have the leadership resources to sustain flight and provide not only sinews but direction.

So, we have squared our circle of reasoning and are back where we started. Where is the human material for leadership coming from? How can we implant the qualities which leadership requires? How can we locate the individuals who nourish this spark within them and help them rise to the top? Certainly we must begin by differentiating between leadership and technical skill, between executive training on the one hand, and business statesmanship on the other.

As Professor Robert L. Katz of the Amos Tuck School at Dartmouth College has pointed out, successful administration rests upon three basic skills: technical, human, and conceptual. The first is primarily concerned with working with things, including processes or physical objects. Human skill involves working with people and influencing their behavior. Conceptual skill involves the ability to see the enterprise as a whole, as an organization, and as a part of the community and of the over-all economy.

The author believes that when we talk about business leadership we are thinking in terms of conceptual skills, which employs the other two as contributing elements in building and administering the business organization. How, then, can we aug-

* The Technology Review, 56:492 (July, 1954).

ment the supply of conceptually skilled individuals to insure business growth in the future?

To begin, we cannot create them. The spark is in-born, not implanted. It is like the difference between a concert pianist and a composer, between an arranger and a Toscanini. All began as students of music, but God gave relatively few the highest gifts of expression. The analogy holds for business. Our collegiate schools of business graduate some 35,000 individuals a year. Many times that number gain equivalent (some will say better) knowledge in jobs. Some have it in them to become key technicians; others will rise to the level of solo performers. Others have ability, actual or potential, to go higher.

Our problem is twofold: First we must spot these last-named individuals as they rise, and then we must help them develop themselves so they will mount to the zenith. In short, we need to make greater use of selection and motivation. We must do it at all levels, preschool, college, junior executive level, and even also in the higher echelons, where our near-term opportunities are most bright.

The selection process actually goes on all the time, but in a willy-nilly manner. The old dog-eat-dog type of competition for key jobs was, and in many organizations still is, a crude, but effective, form of selection. The father-and-son form of business hierarchy is also a method of selection, but is limited by blood ties. All forms of promotion, short of automatic progression, involve choice and preferment, which are also forms of selection. They are present in the successor-management pattern so typical of smaller business.

Executive development is partly achieved when a formal program with stated objectives and measurable criteria, administered continuously from above, is substituted for instinctive, haphazard and quasi-automatic methods of selection. Coupled with training for specific functions, it goes the necessary step further when it brings to light and continues to encourage and advance those who have latent, potential, and existing conceptual skill.

So we come to motivation. We must provide incentives which may be regarded as the anatomy of ambition. A whole book could be written on the subject, spelling out and adapting to the needs of the modern corporation and society the urges, gratifications, and desires which, operating within an individual, stimulate and encourage him to climb to the top.

Certainly compensation is only one of these elements. Prerogatives of rank are another. The well-rounded leadership development program will encompass both. But there is a point of diminishing returns in these, as most thoughtful people realize. On the income side, taxes enter into the picture, and only the vainglorious are insatiable about prerogatives. Beyond a certain point, therefore, we encounter a negation of leadership.

What we are groping for, the author is inclined to believe, can be defined as *significance*. We need only to look about us to distinguish certain businessmen who have achieved leadership because their inner drive was to attain significance. Their lives are happy and inspiring because their complex of relationships with others is significant.

For every one we recognize as having attained that status vis-à-vis their fellow men, and among their institutions, we will find scores, even hundreds, who stopped along the way because significance was denied them. Here are a few:

The vice-president who declined office in his trade association, professional society, or cherished civic organization because of "business responsibilities"

The industry-minded engineer whose ability of expression was frustrated by the company policy of "one spokesman"

The discouraged creative thinker and originator whose ideas were rebuffed until he gave up innovating

The sales manager whose plans were frustrated because they clashed with a sacred-cow pattern

The treasurer whose reports to management are consistently disregarded when they embody recommendations disliked or distrusted by operating personnel

The research director whose budgets are continuously pared and whose explorations into certain areas are condemned as "impractical"

Here is one critical area where so many executive development programs fall down. They fail because they do not reach high enough. They do not mine the richest lode the average company possesses — the higher echelons a level or two below the top.

It is from these higher levels that our business leaders of tomorrow (not the day after tomorrow) must come. To stretch out executive resources, we must thaw out those human assets now congealed at levels below their maximum potential and get them into situations where they can do the most good.

College seminars for executives, and those run by the American Management Association, are a step in the right direction. So is the application of the conference method to decision making within companies, as when budgets are prepared by the department heads who must live under them rather than by top management who hands down its decisions. Committee work for trade associations is another worth-while proving ground, especially where projects are concerned, such as those of formulating standards, preparing manuals, reviewing processes, or directing promotional campaigns. Working with community groups and colleges is another important avenue of executive development.

These are the things which add luster to lives of participants. They lend significance to what a man is doing, they help to "bring him out," and to increase his self-projection. They should be utilized to a much greater degree than at present.

On the long-term side, it seems obvious that selection and motivation for business leadership should begin at an earlier stage. At what point does a boy make up his mind to become a doctor, a lawyer, a pilot, or a locomotive engineer? Many a youngster makes such a decision while he is still in grammar school, when he is preparing to elect which high school courses to take later on. That is the point where business should step in with proper blandishments, dramatizing what management is, and what it holds in the way of rewards, excitements, dedications,

(Continued on page 112)

THE INSTITUTE GAZETTE

PREPARED IN COLLABORATION WITH THE TECHNOLOGY NEWS SERVICE

Public Relations Director

THE appointment of Francis E. Wylie, Head of the Boston Bureau of Time, Inc., as Director of Public Relations at the Institute, was announced by James R. Killian, Jr., '26, President, on October 31. In making the announcement, Dr. Killian said:

This important appointment reflects the need for a wider understanding of the problems of education and of the constantly increasing importance of science and technology in society.

One of our most important obligations as an institution devoted to education and research in science and engineering is to demonstrate their importance in fulfilling the highest aspirations of our nation.

Mr. Wylie brings to the Institute unusual resources in experience and knowledge. Together with John J. Rowlands who has rendered exceptionally effective service as Director of the News Service for 30 years, he will help M.I.T. to expand its educational services to the public in recording and interpreting the significance of advances in science and technology.

Mr. Wylie was born in 1905 in Bloomfield, Ind., and is the son of the Reverend William H. and Maude S. Wylie. He was educated at the Bloomington High School and Indiana University, from which he was graduated with the degree of bachelor of arts in 1928. He also studied at DePauw University and the University of Grenoble.

From 1928 to 1936, Mr. Wylie was on the staff of the Louisville *Herald-Post*, serving as reporter, assistant city editor, theater editor, and magazine editor. From 1937 to 1944 he served as a reporter and later as assistant Sunday editor on the Louisville *Courier-Journal*. During this period, from 1938 to 1940, he also served as instructor in journalism at the University of Louisville.

Mr. Wylie was appointed chief of the Boston Bureau of *Time* in 1944, and since has become widely known among leaders in industry, business, and education in New England. He will come to his M.I.T. post on January 3.



M.I.T. Photo

Francis E. Wylie

Director of Public Relations at the Institute

New Appointments

SEVEN appointments to the Faculty and Administration of M.I.T. were announced recently by James R. Killian, Jr., '26, President. Dr. James H. Means, '06, formerly Chief of Medical Service at the Massachusetts General Hospital and Jackson Professor of Medicine at Harvard Medical School, has been appointed acting medical director at the Institute. Dr. Means has been consulting physician on the medical staff of M.I.T. since his retirement from the Massachusetts General Hospital in 1951. He will be in charge of all medical services at the Institute until the appointment of a permanent director to succeed Dr. Dana L. Farnsworth, now Henry K. Oliver Professor of Hygiene at Harvard University.

Bruce F. Kingsbury has been named executive secretary of M.I.T.'s Educational Council; formerly assistant to the Director of Admissions, he was grad-

uated from M.I.T. in 1946. Eugene R. Chamberlain, a graduate of Denison University, and Joe Jefferson, who was graduated from Columbia College in 1947 and is on a year's leave of absence from the College Entrance Examination Board, have been named assistants to the Director of Admissions.

Appointed assistant professor in the Department of Mechanical Engineering, Ernest Rabinowicz received the degrees of bachelor of arts and doctor of philosophy at Cambridge University, England, and since 1953 has been on the staff of M.I.T.'s Division of Industrial Cooperation.

Robert J. Levit, associate professor of mathematics at the University of Georgia, was named visiting assistant professor of mathematics for the 1954-1955 academic year; and David W.-C. Shen, who recently came to the United States from Australia, will serve as visiting assistant professor in the Department of Electrical Engineering for the current fall semester.

Brooks Appoints Goetz

THE appointment of Billy E. Goetz, educator, industrialist, and engineer, as professor in the M.I.T. School of Industrial Management, has been announced by E. P. Brooks, '17, Dean. Dr. Goetz, former manager of the Consulting Division of the Sessions Engineering Company and faculty leader of the Columbia University Executive Training Program, joined the Institute staff at the start of the current fall term.

The University of Chicago School of Business awarded Dr. Goetz the degree of bachelor of philosophy in 1924. During the years between 1924 and 1931 he was a graduate student of industrial engineering at Cornell University and of both law and economics at the University of Chicago, where he received the degree of doctor of philosophy in 1949.

Since 1928, when he first joined the faculty of the University of Chicago, Dr. Goetz has integrated his industrial and educational activities. In addition to his business associations as engineer and executive, he served on the faculties of the University of Buffalo, DePauw University, Illinois Institute of Technology, American University, Antioch College, and Columbia University.

The author of numerous articles published in engineering and management journals, Dr. Goetz is secretary-treasurer of the Academy of Management, and in the past served as president of the Chicago and Dayton chapters of the Society for the Advancement of Management.

Balance Sheet

IN his report to the Corporation at its annual meeting on October 4, Joseph J. Snyder, 2-44, Treasurer of the Institute, reported that the total volume of M.I.T. operations was \$46,181,000 for 1953-1954 as compared to \$43,015,000 for the previous year. Of this amount, \$13,693,000 represents the Institute's academic, administrative, and plant operations; \$15,240,000 was for research contracts of the Division of Industrial Cooperation; and \$17,248,000 was for similar operations for the Division of Defense Laboratories. On June 30, 1954, the book value of the Institute's plant was \$34,417,000 — an increase of \$1,352,000 for the year.

Tuition and other income for 1953-1954 amounted to \$4,487,000 as against \$3,806,000 for the 1952-1953 year. This increase reflects the higher tuition rate (\$900) effective in 1953-1954 as well as a larger number of students enrolled. Investment income was reserved for additions to capital funds to a greater extent than in 1952-1953. Gifts and other receipts and contract allowance for indirect expenses totaled \$6,247,000 and were used as required to meet current expenses.

As of June 30, 1954, endowment funds amounted to \$46,058,000 as against \$43,651,000 for the year ending June 30, 1953. Of the total endowment, slightly more than 71 per cent was available for general purposes and the rest for designated purposes. The transfer of unrestricted funds to capital and the addition of investment income to principal were the major sources of new endowment for general purposes.

The gifts, grants, and bequests to the Institute for the year covered by the report amounted to \$4,642,000 — not including a trust bequest of more than half a million dollars that became distributable but was not received before the end of the fiscal year.

Gifts for current use declined in 1953-1954 from 1952-1953 because subscriptions to the 1949-1951 Development Program were completed in large measure in 1952-1953 and the second distribution from the estate of Mrs. Sylvia A. H. G. Wilks was received last year. The Alumni Fund of \$207,919 (which increased from \$189,000 for the year 1952-1953) was the largest gift in invested funds for designated current use.

As of June 30, 1954, the Institute's general investments had a book value of \$57,685,000 and a market value of \$78,604,000 which compares with figures of \$54,508,000 and \$66,741,000, respectively, on June 30, 1953. Special investments and students' notes receivable brought the Institute's investments to a grand total of \$63,084,000 book value and \$85,648,000 market value. These figures are exclusive of investments of the M.I.T. Pension Association.

In recent years, an increasing proportion of academic expenses and related operating expenses has been met with revenues of funds available on a year-to-year basis. With an expanded and more useful plant and a high level of active educational and research operations, some provision needs to be made from current resources for the continuing expenses of future years. In further recognition that a significant part of expenses are met with year-to-year revenues, \$200,000 was appropriated from current receipts to establish a fund for long-term financing of these expenses. Gifts for endowment, funds available for allocation to capital funds, and the reservation of revenues for future expenditures are all important in preparing for the tasks ahead.

Pianist-Composer Joins M.I.T.

AN unusual opportunity to learn the mind and works of a distinguished pianist and composer comes to M.I.T. students this fall with the appointment of Ernst Levy as Carnegie Visiting Lecturer in the Department of Humanities. The appointment of Mr. Levy for the current fall semester was announced recently by John E. Burchard, '23, Dean of M.I.T.'s School of Humanities and Social Studies, who recalled that many M.I.T. students will already remember him for his appearances in the Humanities Series concerts in the spring of 1952 and 1954.

At M.I.T. this fall, Mr. Levy will offer four lecture-recitals on Beethoven piano sonatas, two lectures on the Pythagorean philosophy, and a seminar on the Beethoven piano sonatas. In addition, Mr. Levy will be the Faculty resident in the master's suite of Munroe House, adjacent to Walker Memorial.

Born in Basle, Switzerland, he came to this country in 1941 after a distinguished musical career in Switzerland and France. Since January, 1949, Mr. Levy has been a professorial lecturer in the Division of the Humanities at the University of Chicago and in 1952 he was professor of musicology and conductor of the chorus of the Chicago Musical College.

Dallas Conference

An all-day Regional Conference will be held at the Hotel Adolphus on Saturday, January 29, in Dallas, Texas. Those participating in the conference from M.I.T. will include: James R. Killian, Jr., '26, President; C. Stark Draper, '26, Head of the Department of Aeronautical Engineering; Walter G. Whitman, '17, Head of the Department of Chemical Engineering; John G. Trump, '33, Professor of Electrical Engineering; and Douglas M. McGregor, Professor of Industrial Management. Inquiries regarding reservations should be directed to Edward O. Vetter, '42, Geophysical Service, Inc., 5900 Lemmon Avenue, Dallas.

Topics in Chemistry

SIR ALEXANDER R. TODD, distinguished British scientist and professor of organic chemistry at the University of Cambridge, England, has accepted an appointment as Arthur D. Little Visiting Professor of Chemistry at M.I.T. for the current fall semester.

George R. Harrison, Dean of the School of Science at M.I.T., announced a series of 20 lectures on "Selected Topics in Natural Product Chemistry" to be delivered by Sir Alexander during his four months at the Institute. In these lectures, Sir Alexander ex-

pects to deal with the chemistry of one group of vitamins, their function in enzyme systems, and the general field of nucleotide chemistry.

An outstanding educator and research scholar, Sir Alexander is chairman of the British Government's Advisory Council on Scientific Policy, and in 1949 was awarded the Davy Medal of the Royal Society of London for the year's most important European or Anglo-American discovery in chemistry. He was knighted by Queen Elizabeth in July, 1954.

Sir Alexander, who delivered a special lecture in M.I.T.'s Chemistry Department three years ago, received doctorates in science and philosophy at the University of Glasgow, Frankfurt University (Germany), and Oxford University. His varied professional career has included positions as assistant in medical chemistry and Beit Memorial Fellow at the University of Edinburgh; staff member of the Lister Institute of Preventive Medicine in London; reader in biochemistry at the University of London; visiting lecturer at the California Institute of Technology; Sir Samuel Hall Professor of Chemistry and director of the chemical laboratories at the University of Manchester; and visiting professor at the University of Chicago. He is a fellow of Christ's College, Cambridge, England, and since 1944 has held his present post at the University of Cambridge.

WRITINGS OF COMPTON

(Continued from page 92)

204. Science in Education. *Science Educ.*, **20**:53-55 (1936).
205. What's Ahead in Physics: Abridged. *Science*, **84**: sup. 10 (Nov. 6, 1936).
206. What's Next in Science? *Elec.Eng.*, **55**:436-437 (May, 1936); *Vital Speeches*, **2**:250-252 (Jan. 27, 1936).
207. Whither Bound? *Tech.R.*, **38**:265 (Apr., 1936).
208. Address at the Third Dearborn Conference of Agriculture, Industry and Science. *Science*, **85**:sup.12-13 (May 28, 1937).
209. Contributions of the Mellon Institute to the Advancement of Science, a National Asset. *Sci.Mo.*, **45**:97-100 (Aug., 1937).
210. Education and Business Leadership. *Mech.Eng.*, **59**: 841-843 (Nov., 1937).
211. The Electron: Its Intellectual and Social Significance. *Science*, **85**:27-37 (Jan. 8, 1937); *Nature*, **139**:229-240 (Feb. 6, 1937); *Smithsonian Inst.Publ.Repts.*, **1937**:205-223.
212. Elihu Thomson. *Science*, **85**:374-376 (Apr. 16, 1937).
213. The Engineer in Industrial Relations. Address before the Associated Industries of Massachusetts, October 28, 1937 (with W. R. Maclaurin) (Cambridge, Mass.: M.I.T., 1937).
214. The Engineer in Industrial Relations. I. Why the Engineer Has an Interest in Industrial Relations. *Tech.Eng.News*, **18**:173-175 (Dec., 1937).
215. Engineering in an American Program for Social Progress. *Science*, **85**:275-280; 301-305 (Mar. 19, 26, 1937).
216. A Forecast of Technological Education. *Sci.Mo.*, **45**: 357-360 (Oct., 1937).
217. Foreword. In *Physics in Industry*. (New York: American Institute of Physics, 1937).
218. Income from Endowment as Affected by Conditions of the Investment Market. *Assoc. of Amer. Univ. J. of Proc. and Addresses*. 39th annual conference, Brown University (Nov., 1937).
219. Low Voltage Proton Sources. (with E. S. Lamar and W. W. Buechner) *M.I.T. Physics Dept. Contribution*, Series 3, No. 276; *Phys.R.*, **51**:936-941 (June 1, 1937).
220. The Mission of Science—the Economic Betterment of the American People. *Third Dearborn Conference of Agriculture, Industry and Science. Proceedings*. (Dearborn, Mich.:

May 25-27, 1937); *Farm Chemurgic Journal*, **1**:12-21 (Sept., 1937).

221. A National Asset. *R.Sci.Instr.*, **8**:182 (June, 1937).
222. The Public Interest. *Edison Elec.Inst.Bull.*, **5**:5-9 (Jan., 1937).
223. Relation between Engineering Educators and Industry. *J.Eng.Educ.*, **28**:38-49 (Sept., 1937).
224. Science and the College. *Franklin and Marshall Paper*, **1**:13-19 (Dec., 1937); *Tech.R.*, **40**:80 (Dec., 1937).
225. Science in an American Program for Social Progress. *Sci.Mo.*, **44**:5-12 (Jan., 1937).
226. The Stuff of Life. Our Talents and Their Care. *Vital Speeches*, **3**:556-559 (July 1, 1937).
227. What's Ahead in Physics? *R.Sci.Instr.*, **8**:43-47 (Feb., 1937).
228. Address. In *Proceedings of the Installation of Edwin Sharp Burdell—the Sixth Director of the Cooper Union*, November 3, 1938. (New York: Cooper Union for the Advancement of Science and Art, 1938).
229. Biographical Memoir of Augustus Trowbridge, 1870-1934. *Nat.Acad.Sci.Biographical Memoirs*, **18**:219-244 (1938).
230. College Plans and Systems. *Sch.and Soc.* **48**:605-611 (Nov. 12, 1938).
231. The Consulting Engineer. In *The Consulting Engineer: a Brochure*... prepared by George C. Diehl and Robert Ridgway for the American Institute of Consulting Engineers (New York: Institute, 1938).
232. The Definition of an "Engineer." *Engineer*, **116**:417 (Oct. 14, 1938).
233. The Engineer in Industrial Relations. I. Why Does the Engineer Have an Interest in Industrial Relations? *Tech.R.*, **40**:178-180 (Feb., 1938).
234. Engineering and Social Progress. *J.Eng.Educ.*, **29**:7-11 (Sept., 1938).
235. Engineering in an American Program for Social Progress. In *Essays in Science and Engineering*, by F. Montgomery and L. N. Becklund, Rev. ed. (New York: Farrar and Rinehart, Inc., 1938).
236. The Influence of Technical Progress upon Social Development. In *7th International Management Congress. Proc.*, Sept., 1938 (Baltimore: Waverly Press, Inc., 1938).
237. Instruments of Social Progress. In *Instruments of Social Progress: Program and principal addresses at the 40th anniversary* (Continued on page 100)

BUSINESS IN MOTION

To our Colleagues in American Business ...

These sketches show a Revere Extruded Shape in Copper, and the electrical part made from it. The part, called a "fishtail", is a terminal block on a high-frequency transformer, used in induction heating apparatus. Such equipment produces a high frequency field of sufficient power to heat or even melt metals placed within it. (It is often the case that the coil through which the oscillating currents flow is made of Revere Copper Tube.) Applications of this method of heating are numerous. For example, vacuum tubes are heated by induction to drive air and gases from the metal parts while the vacuum is being established. It is sometimes necessary to cast metal in a vacuum; induction heating makes this possible. The speed, economy and uniformity of the method also make it highly attractive for such tasks as heat-treating and hardening, brazing, soldering, and heating prior to forging, upsetting, or other hot working. This is a fast-growing modern method, and the manufacture of the equipment for it is an industry in itself.

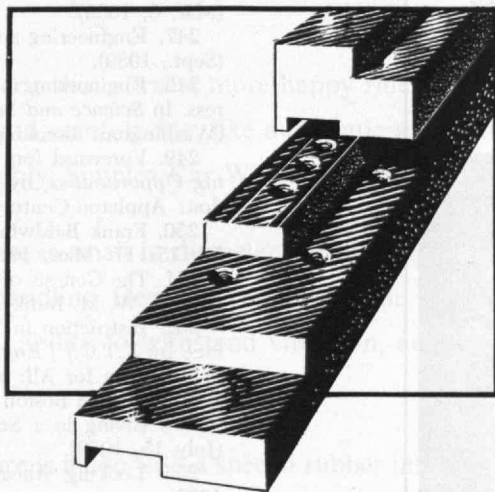
Because it is a part of the electrical industry, it uses a lot of copper. And it has found that Copper Extruded Shapes by Revere contribute to both speed and economy. The fishtail illustrated formerly was machined from solid copper bar. On a typical run, the total manufacturing cost for a certain number of pieces was \$35,000. Because of the considerable amount of transverse milling required, you might

think that an extruded shape would be of doubtful economy. However, analysis indicated that appreciable savings were possible, even though the bar cost 10 cents less per pound. Eventually, these figures came out: using the extruded shape, total cost on the same number of fishtails was \$25,700. That meant a saving of \$9,300, or 26.6%.

Extruded shapes sometimes can indeed work miracles. The shape shown is relatively simple. However, quite complex shapes are possible, some so complex that they could not be produced by any other method, giving consideration to weight, strength, and cost. Another advantage of the shape is reduction of scrap. In some cases, a finished part is produced merely by cutting pieces off a shape, when scrap almost disappears. The limitation on the extrusion process is this: all design details must be parallel to the axis of extrusion.

But don't let that scare you. The fishtail was finished by a number of operations at angles to the axis, and the shape still saved a lot of money.

Revere would be glad to go into details with you on the application of extruded shapes in copper and copper-base alloys, and aluminum alloys. Perhaps we can help you find ways to new economies. And if you use none of those metals, we suggest that you consult the people from whom you buy your materials. Take them into your confidence and add their knowledge to yours. It should pay you to do so.



REVERE COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

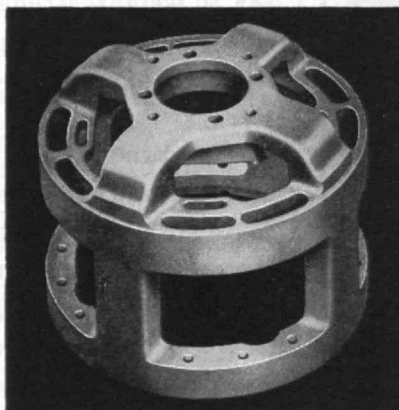
Executive Offices: 230 Park Avenue, New York 17, N. Y.

SEE "MEET THE PRESS" ON NBC TELEVISION, SUNDAYS

CASTING FOR QUALITY?



The Most Complete
and Modern
Die-Casting Facilities
in New England



Our latest type high pressure
Lester Phoenix machines insure
precision low-cost castings.

You can depend upon our proven
know-how to design and develop
your most intricate castings.

Ask to have the Mason represent-
ative call, or send us your prints.
Our Engineering department will
give every request, whether large
or small, conscientious prompt
attention.

*L. E. Mason is an approved source
for America's leading manufacturers.*

L. E. MASON CO.
BOSTON 36, MASS.
Established 1931

WRITINGS OF COMPTON

(Continued from page 98)

versary and dedicatory exercises of Northeastern University, October 3, 1938. (Boston, Mass.: Northeastern University, 1938); *J.Eng.Educ.*, 29:265-274 (Dec., 1938).

238. The Mission of Science. *Cotton Trade Journal. International ed.*, 10:24, 174, 191 (1938).

239. New Demands on Technology. *Tech.R.*, 41:77 (Dec., 1938).

240. Possibilities in Biological Engineering. *Ann. Internal Medicine*, 12:867-875 (Dec., 1938).

241. Progress toward Our Goal. In *M.I.T. Alumni Fund Campaign Report. 1937-1938. Appendix.* (Cambridge, Mass.: Office of the President, M.I.T., 1938).

242. The Social Implications of Scientific Discovery. Delivered at the American Philosophical Society, Independence Square, Philadelphia, March 15, 1938. *Henry Labarre Jayne Foundation* (Lectures, 1938).

243. Universities and the Public Welfare. *Abbott Laboratories. Addresses, Dedication of Research Building* (North Chicago, Ill.: Abbott Laboratories, October 7, 1938).

244. Academic Freedom and Academic Responsibility. *J.Eng.Educ.*, 29:573-574 (Apr., 1939).

245. Electron: Its Intellectual and Social Significance. In *Modern Speeches on Basic Issues*, by L. R. Sarett and W. T. Foster, comps. (Boston and New York: Houghton Mifflin Company, 1939).

246. Elihu Thomson the Scientist. *Science*, 89:188-191 (Mar. 3, 1939).

247. Engineering and Social Progress. *J.Eng.Educ.*, 30:8-17 (Sept., 1939).

248. Engineering in an American Program for Social Progress. In *Science and Social Change*, by J. E. Thornton, comp. (Washington: Brookings Institution, 1939).

249. Foreword (on the field of Engineering). In *Engineering Opportunities*, by R. W. Clyne, ed. (New York and London: Appleton-Century, 1939).

250. Frank Baldwin Jewett-John Fritz Medalist. *Elec.Eng.*, 58:115-117 (Mar., 1939).

251. The Genesis of a Curriculum in Biological Engineering (with J. W. M. Bunker). *Sci.Mo.*, 48:5-15 (Jan., 1939).

252. Instruction in English in Engineering Colleges. (Preface by K.T.C.) *J.Eng.Educ.*, 29:549-550 (Mar., 1939).

253. Jobs for All: the Goal of Science. *This Week Magazine*, section in *Boston Herald* (Sunday, Jan. 1, 1939).

254. Living in a Scientific Age. *Vital Speeches*, 5:593-596 (July 15, 1939).

255. Looking Ahead in Research. *Tech.R.*, 42:17 (Nov., 1939).

256. Looking Forward in Research. *Ind.andEng.Chem.*, 31:1212-1214 (Oct., 1939).

257. The Positive Column of the Nitrogen Arc at Atmospheric Pressure (with E. S. Lamar and A. M. Stone). *M.I.T. Physics Dept. Contribution, Series 3, No. 394; Phys.R.*, 55:1145 (June 1, 1939); *Phys.R.*, 55:1235-1244 (June 15, 1939).

258. Relation of the Federal Government to Higher Education. *Assoc.ofAmer.Univ.J. of Proc. and Addresses*, 1939.

259. Science, Employment and Profits. *Vital Speeches*, 5:179-184 (Jan. 1, 1939).

(Continued on page 102)

SCULLY SIGNAL COMPANY

Safe Fills } with
No Spills } **VENTALARM®**
WHISTLING TANK FILL SIGNAL

for automotive, home
and diesel fuel tanks

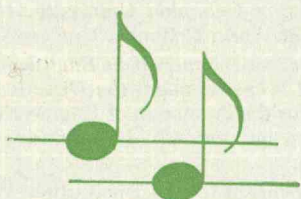
F. P. Scully '15



174 Green Street, Melrose 76, Mass.

"JUST FILL

'TIL THE WHISTLE STOPS"



A HAPPY RIDER IS LIKE A MAGNET

... because he (or she) attracts more happy riders. That's why equipment that makes passengers happy and comfortable, like automatic air-conditioning and suitable lighting, must operate dependably. Simplex Car Wire helps make sure it does.

Simplex Car Wire is small in diameter for easy installation in less space and light in weight for convenient handling. Despite its small size and light weight, it sacrifices none of the qualities of long life, ability to withstand vibration, and resistance to abrasion, acids, heat, oil, and moisture.

Simplex Car Wire is made with a special rubber insulating compound that readily withstands oxidation. It retains its physical and electrical properties even in the presence of water and extreme heat. A tough neoprene jacket protects it against service-encountered hazards.

To help insure reliable functioning of comfort-producing equipment for passengers, specify Simplex Car Wire. A letter to the Railroad Department at the address below, or an inquiry of your nearest Simplex representative, will bring more complete information. Write or call them today.

Simplex

CAR WIRE

another product of

SIMPLEX WIRE & CABLE CO., 79 Sidney Street, Cambridge 39, Mass.

Digital Communication Engineers

with
experience
in
the
fields
of

Systems
Engineering
Miniaturization
Circuit
Development
Electromechanical
Development
Digital
Techniques

Long-Range Information Transmission

New advancements in the field of long-range information transmission are being made at Hughes with digital techniques.

Areas of Work

To further expand work in this area, Hughes Research and Development Laboratories are interested in people with experience in airborne communication systems, digital storage, low frequency measurements, modulation systems, miniaturized packaging, audio, IF and RF circuitry in the HF range, analog to digital—and other data conversion methods.

Scientific and Engineering Staff

Hughes

RESEARCH
AND DEVELOPMENT
LABORATORIES

CULVER
CITY,
LOS
ANGELES
COUNTY,
CALIFORNIA

Relocation of applicant must not cause disruption of an urgent military project.

WRITINGS OF COMPTON

(Continued from page 100)

260. Some Comments on Graduate Training for Engineers (with M. W. Smith and others). *Elec.Eng.*, 58:168-174 (Apr., 1939).

261. Stuff of Life: Our Talents and Their Care. In *Modern Speeches on Basic Issues*, by L. R. Sarett and W. T. Foster, comps. (Boston and New York: Houghton Mifflin Company, 1939).

262. Technical Progress and Social Development. *Elec. Eng.*, 58:12-15 (Jan., 1939).

263. Forum of Youth and Industry. In *The Opportunity for Youth in Building the World of Tomorrow*, by General Motors Corporation. (New York: Corporation, 1940).

264. Influence of Research on Engineering. In *The School of Engineering . . . at Columbia University, 1864-1939*, by J. K. Finch, ed. (New York: Columbia University Press, 1940).

265. Introduction. In *Instruction in English in Engineering Colleges: A Report Prepared under the Direction of the Committee . . . Society for the Promotion of Engineering Education*, English, Committee on. *Journal of Eng.Educ.*, 30:15 (June, 1940, Supplement).

266. Peace and Some of the Ancient Virtues. *Vital Speeches*, 6:631-633 (Aug. 1, 1940).

267. Religion in a Scientific Era. *Sci.Mo.*, 50:73-77 (Jan., 1940); *Tech.R.*, 42:319 (June, 1940).

268. Research as a By-Product of Education. *Think*, 6:9, 31 (Feb., 1940).

269. Science, the Soul of Prosperity. *Vital Speeches*, 6:322-325 (Mar. 15, 1940).

270. 2% for Research. *National Assoc. of Manuf. A Survey of Research Expenditures* (Dec., 1940).

271. Biographical Memoir of Elihu Thomson, 1853-1937. *Nat.Acad.Sci.Biographical Memoirs*, 21:141-179 (1941).

272. The Contributions of Technology. *Sci.Mo.*, 53:210 (Sept., 1941).

273. Contributions to Science by the Research Laboratory of the General Electric Company. *Science*, 93:100-101 (Jan. 31, 1941).

274. Industrial Research Expenditures. In *Research—a National Resource. II. Industrial Research . . . Report of the National Research Council*. U.S. National Resources Planning Board. (Washington, D.C.: G.P.O., 1941).

275. Industry and the National Emergency. *Magazine of Cambridge*, 1:1-5 (Mar., 1941).

276. Introduction. In *Adventures of a White-Collar Man*, by A. P. Sloan (New York: Doubleday, Doran and Company, Inc., 1941).

277. Making the Future Work. *National Assoc. of Manuf. A Survey of Research Expenditures* (1941).

278. No Subtleties to Perplex. *Tech.R.*, 43:415 (July, 1941).

279. Our America Tomorrow. *Vital Speeches*, 7:361-362 (Apr. 1, 1941).

280. Present Pleasures or Future Benefits. *Tech.R.*, 43:347 (June, 1941).

(Continued on page 104)



"Precision-Gauged" HAIRSPRINGS

Manufacturer of all types of hairsprings, with more than 20 years experience making Beryllium Copper Hairsprings for critical instrument applications.

PRECISION PRODUCTS COMPANY INC OF WALTHAM

WALTHAM 54

MASSACHUSETTS



quick way to new sales ideas

These new Cabot products are designed to improve your products. They may give you the new sales ideas you need to better your position in the market... and in less time than you may expect.

- () **NEW** thermal carbon blacks for mechanical and extruded rubber goods... natural rubber tubes. As the world's only manufacturer of a complete range of channel, furnace and thermal blacks, Cabot offers more than 45 different grades for use in rubber, ink, paint, varnish, lacquer, plastics and paper products.
- () **NEW** white uniform calcium silicate—Wollastonite. As an inert paint extender, it has more desirable properties than other extenders singly or combined. Excellent for dry pressing of wall tile and semi-vitreous ceramic products and as a mineral filler for polyester resins.
- () **NEW**, almost chemically pure silica—Cabosil. An "airborne" silica for increasing the viscosity of polyester resins to a desired working consistency. Also used for rubber, plastics, paints, varnish, printing inks, pharmaceuticals, cosmetics, insecticides, adhesives, floor waxes.
- () **NEW**, almost chemically pure, extremely fine alumina pigment—Alon C. For textiles, rubber, plastics, paints, varnish, printing inks, pharmaceuticals, cosmetics, insecticides, adhesives, floor waxes.
- () **NEW** plasticizers offering improved flexibility permanence—Cabstex ODP and Cabstex ODA and others. Two of a complete range of plasticizers developed for the specific improvement of vinyl plastics products.
- () **NEW** Elftex carbon blacks. Fluffy oil furnace blacks specifically developed to give letterpress inks same quality printed blackness previously obtained only with higher priced channel blacks.
- (V) For complete information, check the Cabot products that interest you... write

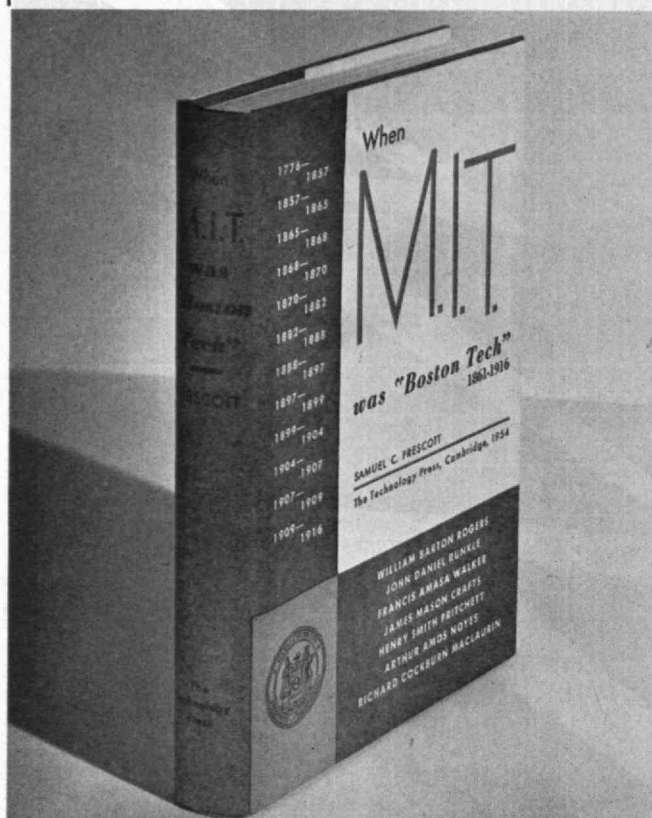


Godfrey L. Cabot, Inc. 77 FRANKLIN STREET, BOSTON 10, MASSACHUSETTS

Branch Offices or Agents in all Principal Cities of the World

(Continued from page 102)

For Christmas . . .



xviii + 350 pages
with 14 pages
of illustration

\$6.00
per copy

" . . . a chronicle of the decisive years . . ."
—*The Christian Science Monitor*

" . . . reads like a romance . . ."
—*The Boston Globe*

"This volume is unique, it is history, it is interpretation, it is remembrance . . ."
—*The Technology Review*

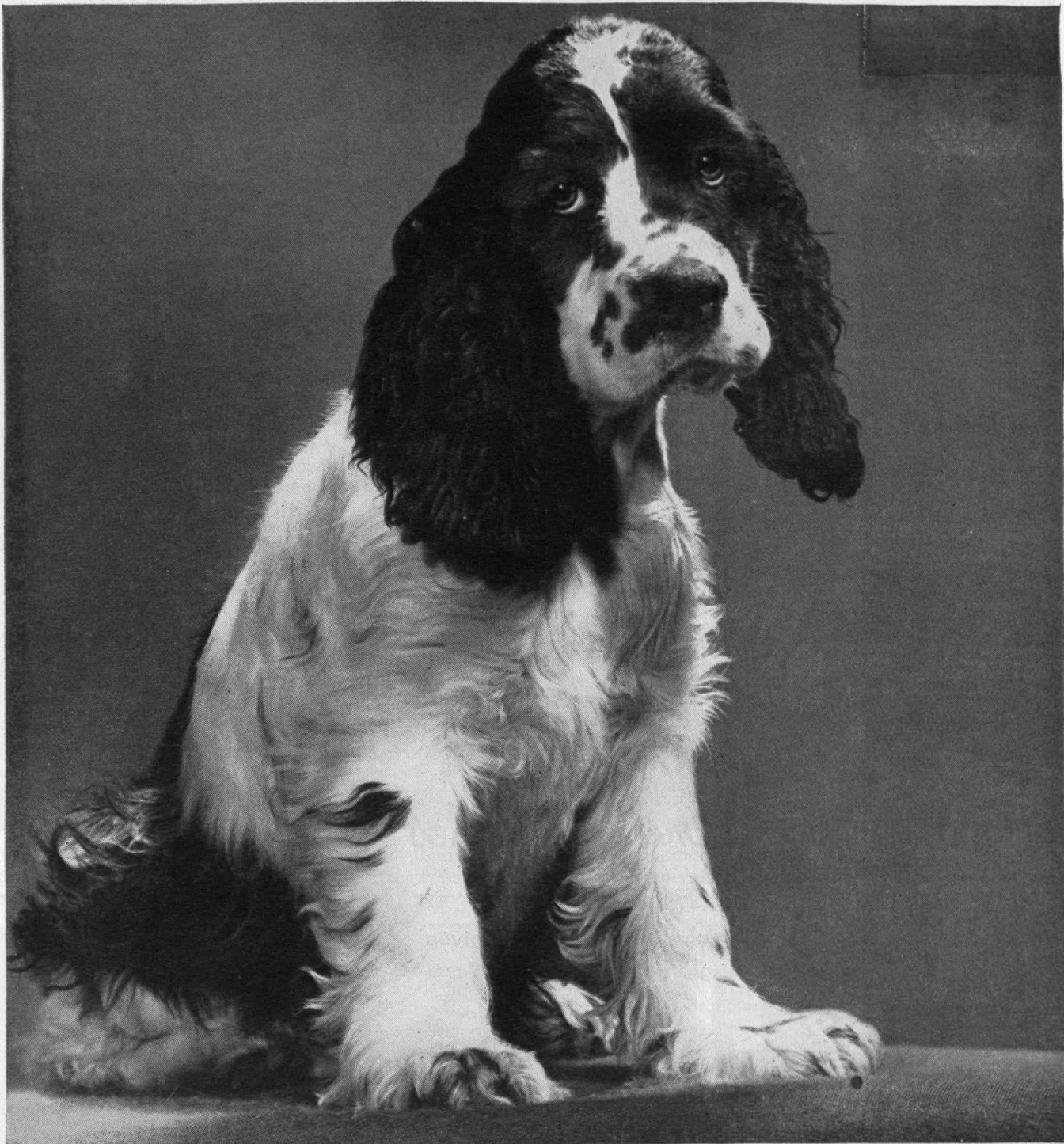
All royalties from *When M.I.T. was "Boston Tech"* have been assigned by Dr. Prescott to the Alumni Fund.

THE TECHNOLOGY PRESS Room 14N229,
Mass. Inst. of Tech.
Cambridge 39, Massachusetts

My check for \$..... is enclosed herewith for
..... copies of *When M.I.T. was Boston Tech*.
Please mail by prepaid parcel post to:

281. Progress at the Massachusetts Institute of Technology. *Science*, **94**:587-588 (Dec. 19, 1941).
282. Science Has but Started. *Rotarian*, **59**:8-10 (July, 1941).
283. Scientific Research for National Defense. In *Organizing Higher Education for National Defense* . . . National Conference of Defense Committee of Colleges and Universities, Washington, D.C., February 6, 1941 (Washington, D.C.: Council, 1941).
284. Some Educational Effects and Implications of the Defense Program. *Science*, **94**:368-369 (Oct. 17, 1941).
285. Technological and Scientific Resources. *Ann.Am.Acad.*, **218**:66-75 (Nov., 1941).
286. Technology Girds for Defense. *Tech Eng.News*, **22**:51 (Apr., 1941).
287. Address. In *Gerard Swope, Sixth Hoover Medalist*. (New York: Hoover Medal Board of Award, 1942).
288. Beyond Victory. *Tech.R.*, **44**:369 (June, 1942).
289. Elihu Thomson, 1853-1937. *Science*, **95**:285-289 (Mar. 20, 1942).
290. The Future of Engineering Education. In *Conferences and Exercises at the Dedication of the New Building of the Technological Institute, Evanston, Illinois, June 15 and 16, 1942* (Evanston, Ill.: Northwestern University, 1942).
291. Man and Technology. In *Science and Man*, by R. N. Anshen, ed. (New York: Harcourt Brace and Company, 1942).
292. Office of Scientific Research and Development. *J.Eng. Educ.*, **33**:59-69 (Sept., 1942).
293. The Postgraduate and His World. *Tech.R.*, **44**:444 (July, 1942).
294. Report of the Rubber Survey Committee, September 10, 1942 (Washington, D.C.: G.P.O., 1942).
295. Scientists Face the World of 1942. (with R. W. Trullinger and V. Bush) (New Brunswick, N.J.: Rutgers University Press, 1942); *Rutgers University. Publications of the One Hundred Seventy-Fifth Anniversary Celebration*, No. 3.
296. Address at the Annual Alumni Dinner at the Hotel Statler on Saturday evening, January 30, 1943. (Cambridge, Mass.: M.I.T., 1943) (mimeographed).
297. Engineering Education—the Future. *J.Eng.Educ.*, **34**:41-46 (Sept., 1943).
298. Foreword. In *The Food Industries Conference to Public Health through Independent Research*. (New York: Nutrition Foundation, 1943).
299. Importance of Fire Protection and the War. In *Summer Conference on Fire Protection Engineering, M.I.T., June 22-24, 1942. Fire Protection Engineering. A Symposium* . . . (Boston: National Fire Protection Association, 1943).
300. Isaiah Bowman, President of the American Association for the Advancement of Science. *Science*, **97**:305-306 (Apr., 2, 1943).
301. Organization of American Scientists for the War. *Roy. Soc.London. Pilgrim Trust Lecture* (1943); *Chem.Age*, **48**:599-600 (June 5, 1943); *Nature*, **151**:601-606 (May 29, 1943); *Roy. Soc.Proc.*, **182**:1-17 (Sept., 1943); *Science*, **98**:71-76; 93-98 (July, 23, 30, 1943).
302. Our Patent System: It Can Be Improvd, but It Must Be Preserved. *Journal of Commerce and Commercial*, **195**:3 (Mar. 11, 1943).
303. Toward the Mountain. *Tech.R.*, **45**:235 (Mar., 1943).
304. Valedictory Address to the Graduating Class of the Massachusetts Institute of Technology at the 76th Graduation Exercises in Symphony Hall, Boston, on . . . February 1, 1943. (Cambridge, Mass.: M.I.T., 1943) (mimeographed).
305. Contributions to Education by Colonel Bradley Dewey. *Chem. and Eng. News*, **22**:2083 (Dec. 10, 1944).
306. The Force of Ideals. *Tech.Rev.*, **46**:333 (Apr., 1944).
307. Future of Engineering Education. *Power Plant Eng.*, **48**:55 (Jan., 1944).
308. New England's Reaction to Technological Progress. *Federal Reserve Bank of Boston. Proceedings of the . . . Annual Meeting*, **20**:19-26 (1944).
309. Omnipotent Electron. In *New Worlds in Science*, by H. Ward, ed. (New York: R. M. McBride and Company, 1944).
310. To Train Men Liberally to be Leaders. *Tech.R.*, **47**:95 (Dec., 1944).

(Continued on page 106)



"If he'd only call her up..."

"I'm sad, too, when she's upset. If he'd only call her up everything would be all right. Just one little telephone call can save so much time and worry."

BELL
TELEPHONE
SYSTEM



WRITINGS OF COMPTON

(Continued from page 104)

311. Young Scientists and War. *Sci.N.L.*, 45:180 (Mar. 18, 1944).
312. Foreword. In *Willis Rodney Whitney, Pioneer of Industrial Research*, by J. T. Broderick. (Albany: Ft. Orange Press, 1945).
313. Institute Evaluates Its War Record. *Tech.R.*, 48:39-41, 109 (Nov., Dec., 1945).
314. Mission to Tokyo. *Tech.R.*, 48:99-102, 114 (Dec., 1945).
315. *National Security Supported by: I. Scientific Research. II. Universal Military Training.* (Cambridge, Mass.: Technology Press, M.I.T., 1945).
316. National Security and Military Training. *Scholastic*, 47: sup. 4 (Sept., 17, 1945).
317. Prerequisite to Freedom. *Tech.R.*, 47:563 (July, 1945).
318. Report. Research Board of National Security. K.T.C. chairman. *Science*, 101:226-228 (Mar. 2, 1945).
319. A Challenge and an Opportunity. *Educ. Focus*, 17:4-8 (Fall, 1946).
320. Challenge to Youth. *Sci.Teacher*, 13:64-65 (Dec., 1946).
321. *The Future of Atomic Energy in Science, Medicine and Industry, and upon What Timetable Must We Operate.* (Detroit League for the Handicapped, Inc., 1946) (mimeographed).
322. Greetings. In *The Science of Nutrition: Papers Presented at Meetings of the Nutrition Foundation, November 13 and 14, 1946.* (New York: Foundation, 1946).
323. If the Atomic Bomb Had Not Been Used. *Atlantic Mo.*, 178:54-56 (Dec., 1946).
324. Institutes of Technology: Some Trends and Possibilities. In *The Inauguration of President Lee A. Du Bridge*, 1946. (Pasadena: California Institute of Technology, 1946).
325. James Bryant Conant. *Science*, 103:191-192 (Feb. 15, 1946).
326. Organization for Research. In *Boston Chamber of Com-*

(Continued on page 108)



AT YOUR SERVICE



SPECIALIZED ENGINEERING

SPECIALIZED EXPERIENCE

SPECIALIZED MACHINERY

FOR

TWISTING • BUNCHING

STRANDING • FORMING

AND LAYING IN THE

TEXTILE • WIRE • CORDAGE

AND MANY OTHER INDUSTRIES

WRITE TODAY, YOUR INQUIRY WILL GET PROMPT ATTENTION

HASKELL-DAWES

MACHINE CO., INC.

2131 E. ONTARIO STREET

PHILADELPHIA 34, PA.

Gentlemen prefer blondes

Have you seen Corabrite? It's H&D's new lighter-colored, smoother corrugated board, and it gives shipping boxes a bright new appearance.



HINDE & DAUCH

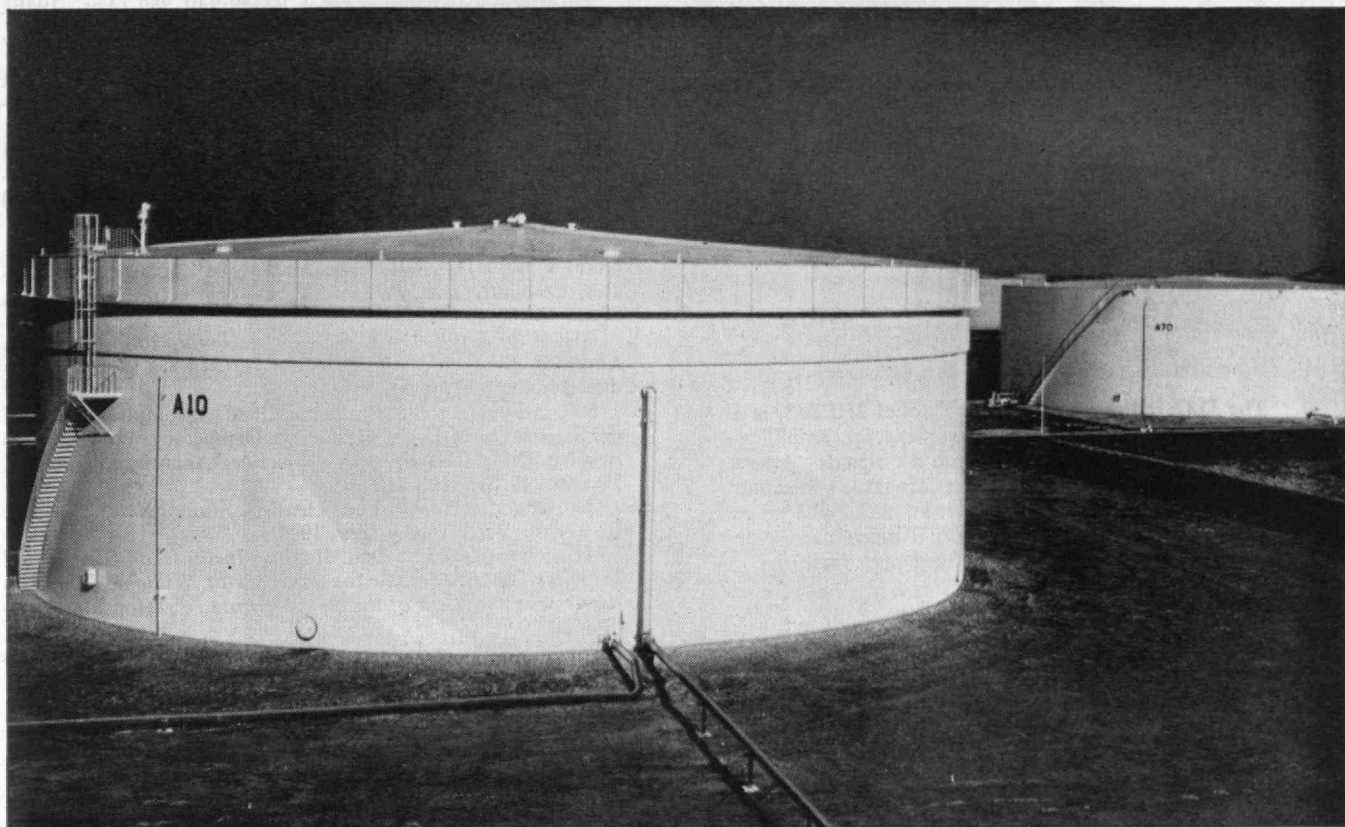
SANDUSKY, OHIO

LEADERS IN THE MANUFACTURE OF CORRUGATED BOXES FOR MORE THAN 50 YEARS



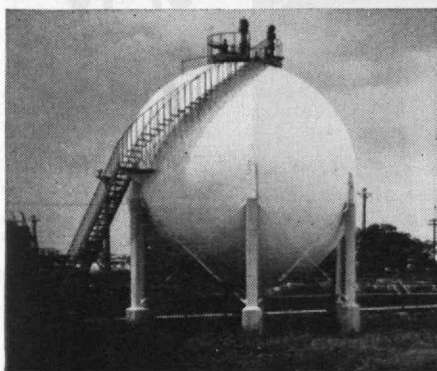
CONSERVATION TANKAGE

Designed for the Petroleum Industry

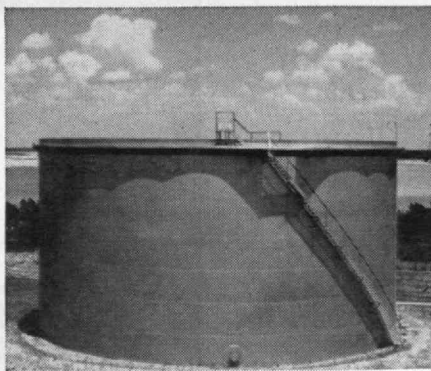


The Graver Expansion Roof Tank with its liquid seal *protects under all conditions*. It is ideal for positive control of gasoline vapors against evaporation. Easy to maintain, it

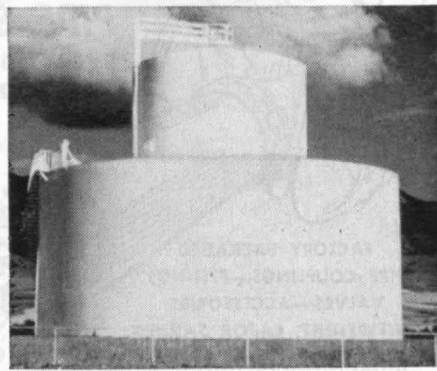
eliminates breathing losses and reduces filling losses. It can well protect an entire terminal. It has gained rapid recognition among leading petroleum companies.



GRAVERSPHERES are especially suitable for storage of natural gasolines and other volatile liquids such as butane. They are the ideal answer to gas storage—sustaining pressures up to and exceeding 100 psi.



To prevent the formation of vapors, the **GRAVER DOUBLE-DECK FLOATING ROOF** is in direct contact with the liquid. This exclusive GRAVER design is widely used at crude and product storage areas, at refineries and pipeline terminals.



The *thrifty* **VAPOR-MIZER** eliminates standing losses and reduces filling losses. Moreover, less steel is used in building. The **VAPOR-MIZER** often eliminates the necessity for reinforcing manifolded tanks, since it operates at pressures less than one ounce.

GRAVER TANK & MFG. CO., INC.

East Chicago, Indiana

CHICAGO • NEW YORK • PHILADELPHIA • EDGE MOOR, DEL. • ATLANTA • CATASAUQUA, PA. • PITTSBURGH • CLEVELAND • DETROIT • TULSA
SAND SPRINGS, OKLA. • HOUSTON • ODESSA, TEXAS • CASPER, WYO. • LOS ANGELES • FONTANA, CAL. • SAN FRANCISCO

a **UNIQUE** application . . . of a **NEW** principle
for a **BETTER** instrument

Doelcam

D-C Indicating Amplifier



Model 2HLA-3

- ▶ **High Stability**
- ▶ **Wide Dynamic Response**
- ▶ **Magnetic Input**
- Linearity within 1%**
- Zero-center meter**
- Will drive recorders**

Write for Bulletin IA15

The D-C Indicating Amplifier, Model 2HLA-3, is a completely self-contained instrument for amplification and measurement of minute d-c signals. A new design concept utilizing the DOELCAM Second-Harmonic Magnetic Converter as the input stage avoids the limitations of the usual mechanical type converters and results in improved performance.

Doelcam CORPORATION

Soldiers Field Road, Boston 35, Mass.
Regional Offices: Los Angeles, Calif.,
Washington, D. C., Chicago, Ill.

Instruments for Measurement and Control

Synchros • Gyros • Servos • Microsyns • Servo Motors

WRITINGS OF COMPTON

(Continued from page 106)

merce. Retail Trade Board. 18th Boston Conference (Boston: Board, 1946).

327. Our Universities at War. *Army Ordnance*, 30:51-53 (Jan.-Feb., 1946).

328. Palestine Needs a Modern Institute of Technology. *Technion J.*, 5:33-36 (June, 1946).

329. Return to Religion. *Tech.R.*, 48:349-352 (Apr., 1946).

330. Science and National Policy. *Sci.Mo.*, 63:125-128 (Aug., 1946).

331. Scientific and Engineering Progress. Insurance against Aggression and Depression. *Chem.andEng.News*, 24:1328-1332 (May 25, 1946).

332. Scientific Progress—Insurance against Aggression and Depression. In *George Westinghouse Centennial Forum*, Pittsburgh, 1946; *Science and Life in the World* . . . (New York and London: Whittlesey House, McGraw-Hill, 1946).

333. Society for the Promotion of Engineering Education. Outlook in the Demands for and Supply of Engineering Graduates, Committee on. Report. K.T.C., chairman; *J.Eng.Educ.*, 37:25-49 (Sept. 1946).

334. *Why Religion? An Address . . . before the Tenth Tech Embassy*, 17 April, 1946. (Cambridge: M.I.T., 1946) (Reproduced from typewritten copy).

335. Address to the Graduates. Real Accomplishment and the Satisfaction of Living Result in a Democracy When Leaders Resolve Difficulties through Objective, Analytical Thinking. *Tech.R.*, 49:531 (July, 1947).

336. America Needs More Scientists. *Alumni News*, Syracuse University, 28:6, 14 (January, 1947).

337. Dynamic Education. In *Rice Institute of Liberal and Technical Learning. The Inauguration of William Vermillion Houston as President of the Rice Institute* . . . (Houston: Institute, 1947).

338. Electron and Nucleus: Lessons for Those Who Can Learn. *J.Western Soc.Eng.*, 52:56-61 (June, 1947).

(Continued on page 110)

SAVINGS FLOW
FROM
SPEED-LAY
PIPE SYSTEM
EVERYTHING FOR A
COMPLETE PORTABLE
PIPE SYSTEM

FACTORY PACKAGED
PIPE-COUPPLINGS—FITTINGS
VALVES—ACCESSORIES
LIGHTWEIGHT, LABOR SAVING

immediate installation

by one unskilled man. 2½ to 30
o. d. black or galvanized. Ready
to lay—without delay.

Complete inventory of all In-
dustrial Pipe, Valves, Fittings,
and Flanges.

S. G. ALBERT '29

**DELIVERED
READY
FOR
INSTALLATION**

SPECIALISTS IN PREFABRICATED PIPING

SEND COUPON NOW!

ALBERT PIPE SUPPLY CO., INC.
Berry at N. 13th St., Brooklyn 11, N. Y.
Please send free booklet describing your
Speed-Lay System and services:

NAME.....
FIRM NAME.....
ADDRESS.....
CITY..... STATE.....

ALBERT

PIPE SUPPLY CO., INC.

Berry at North 13th St.
Brooklyn 11, N. Y.
Phone EVERgreen 7-8100

HEAVY-DUTY FORK **LIFTTRUK** REDUCES MATERIAL HANDLING COSTS UP TO **75%**



more lifting power—
more carrying power—
means bigger loads,
heavier loads, higher
stacking, fewer trips.
Faster in-loading and
out-loading at fac-
tory, mill or storage
yard, more efficient
interplant flow means
great savings in time
and manpower.

SILENT HOIST FORK LIFTTRUK available in
5, 7½, 10, 15 ton capacities, are noted
for their superb mobility, long continuous
service, and low upkeep.

**SEND FOR
BULLETIN 77**

Made by the manufacturers of KRANE KAR Mobile Swing Boom Crane
and LIFT-O-KRANE Combination Boom Crane and Fork Lift, with sepa-
rate power winch for Load Line.

SILENT HOIST & CRANE CO.

Pioneers of Heavy Duty Materials Handling Equipment

891 63rd STREET BROOKLYN 20, N. Y.



"Keep your eye on Martin!"

There are two important reasons why you hear this more and more today:

...The finest aircraft plant, engineering, electronic, nuclear physics and research facilities on the eastern seaboard.

...An entirely new management concept in Advanced Design and weapons systems development, embracing creative engineering ranging upward from nuclear powered aircraft to anti-gravity research and tomorrow's satellite vehicle.

If you're interested in hitching your wagon to a rising star, there are exceptional opportunities available to dynamic engineering talent regardless of years of experience.

MARTIN
BALTIMORE · MARYLAND



All Tech Men please note that Technology Store membership entitles you to a Patronage Refund on purchases made in the Harvard Square Store. Non-members may join at either store.

BOSTONIAN FOOTSAVERS

**They provide more than
just good looks**



***Footsaver—the relaxed shoe
with a sole for comfort!***

Footsaver comfort didn't just happen. We planned every inch of it, from the springy shank inside the flexible sole to the glove-soft leather that needs no "breaking in." Try on a pair.

\$19.95

The COOP
Harvard Square Store

WRITINGS OF COMPTON

(Continued from page 108)

339. Five Atomic Bombs and the Future. *Am. Dyestuff Reporter*, 36:295-297 (June 2, 1947).
340. Foreword. In *Combat Scientists*, by L. R. Thiesmeyer and J. E. Burchard. (Boston: Little, Brown and Company, 1947).
341. If the Atomic Bomb Had Not Been Used. *Infantry J.*, 60:16-17 (Feb., 1947).
342. A Program for National Security, May 29, 1947. Report of the U.S. President's Advisory Commission on Universal Training. K.T.C. chairman. (Washington, D.C.: G.P.O., 1947).
343. Safely through Rough Waters. *Tech.R.*, 50:38 (Nov., 1947).
344. Science at the Front. In *Scientists Speak*, by W. Weaver, ed. (New York: Boni and Gaer, 1947).
345. Universal Military Training for National Security and World Peace. In *New York Herald Tribune (newspaper)*. *Modern Man: Slave or Sovereign* (1947).
346. *The Veto of the National Science Foundation Bill*. Statement . . . Issued . . . in Response to Request for Comment on the Veto by President Truman of the National Science Foundation bill on August 6 (Cambridge, Mass.: Director of News Service, M.I.T., 1947) (Reproduced from typewritten copy).
347. Foreword. In *Applied Physics (Science in World War II): Electronics*, by C. G. Suits, ed. (Boston: Little, Brown and Company, 1948).
348. Food, Fuel and Faith. Graduation address. Class of February 1948. (Cambridge, Mass.: M.I.T., 1948) (Reproduced from typewritten copy); *Tech.R.*, 50:288 (Mar., 1948).
349. Massachusetts Institute of Technology, "Tomb of the Dead Languages" (New York: Newcomen Society of England, American Branch, 1948).
350. The Atomic Age. From the Threshold of the Atomic Age. In *The Pacific Era . . .*, by W. W. Davenport, ed. (Honolulu: University of Hawaii Press, 1948).
351. On Freedom of Worship. In *The Pacific Era . . .* by W. W. Davenport, ed. (Honolulu: University of Hawaii Press, 1948).
352. Report of the Secretary-General on Establishing United Nations Research Laboratories. Includes letter from K.T.C. (Lake Success, New York: United Nations, 1948).
353. The Role of the University in the Pacific. In *The Pacific Era . . .*, by W. W. Davenport, ed. (Honolulu: University of Hawaii Press, 1948).
354. Science Fears an Iron Curtain. *Nation's Business*, 36: 47-49 (June, 1948).
355. Technological Progress and the Pacific Society. In *The Pacific Era . . .*, by W. W. Davenport, ed. (Honolulu: University of Hawaii Press, 1948).
356. The Urge for a Better Life. *Tech.R.*, 50:504 (July, 1948).
357. Foreword. In *Invention and Innovation in Radio Industry*, by W. R. Maclaurin, with the technical assistance of R. J. Harman (New York: Macmillan, 1949).
358. If the Atomic Bomb Had Not Been Used. In *Modern Minds*, by H. M. Jones and others (Boston: D. C. Heath, 1949).
359. The Scientist and the Engineer. *University of Toronto*.

(Concluded on page 112)

HOTEL COMMANDER CAMBRIDGE, MASS.

By the Common facing Harvard and Radcliffe Colleges.

315 rooms including transient as well as housekeeping units of 1, 2, 3, and 4 rooms completely furnished.

Colonial Dining Room—Cocktail Lounge—9 Function Rooms accommodating up to 450 persons.

Ten minutes by bus from M. I. T.

Headquarters for Rotary, Kiwanis, Exchange and Quota Clubs

OUR 50TH ANNIVERSARY YEAR

For enabling us to build up the oldest and largest Investment Advisory Service in the world we appreciate the help from M.I.T. men,—especially men of the Class of '98.

Not only were our two Founders—Roger W. Babson and Leroy D. Peavy, both Tech graduates; but today, several other of our key men had their training at M.I.T. Among these we mention Charles W. Wallour, our Executive Vice President, E. L. Quirin, Harry Olson, William Esson and Harry Brockington.

We especially extend our gratitude to Professor Charles M. Spofford and the late Professors George F. Swain and Alfred E. Burton. These men went outside their regular teaching duties to help us when we needed encouragement in our pioneering statistical and forecasting work.

Yet during these fifty years, the art of forecasting business and markets has merely been scratched. Psychology, cybernetics and other fields will supplement statistics to improve the results of the next fifty years. Otherwise, the recent substitution of political legislation for the gold standard and other historical barometers, will make our work even more difficult in years ahead.

BABSON ORGANIZATION

OUR 50TH ANNIVERSARY YEAR

WRITINGS OF COMPTON

(Concluded from page 110)

Applied Science and Engineering. Faculty of Wallberg Lecture, No. 2 (Toronto University, 1949).

360. The State of Science. *Tech.R.*, 51:403 (May, 1949); *Smithsonian Inst. Publ. Rpts.*, 1949:395-410.

361. Superior Weapons. *Sci.N.L.*, 56:22 (July 9, 1949).

362. *The Question of Establishing United Nations Research Laboratories . . . December, 1948.* Includes letter from K.T.C. (Lake Success, New York: United Nations, 1949).

363. Address of Welcome to the Photogrammetry Society . . . at the Harvard Institute of Geographical Exploration, Thursday, September 21, 1950. *Photogrammetric Eng.*, 16:660-662 (Dec., 1950).

364. If I Were Starting Out Today. *Am. Mag.*, 150:15 (Aug., 1950).

365. Incentives and Satisfaction. *Tech.R.*, 52:497 (July, 1950).

366. Some Factors in Food Research. Contribution to the Scientific Panel at the Dedication of National Dairy Research Laboratories, Oakdale, Long Island, N.Y. (June 2, 1950).

367. Universal Military Training. *Tech.R.*, 53:17-19 (Nov., 1950).

368. Engineers. *Sci. Am.*, 185:65-68 (Sept., 1951).

369. Engineers and National Security. *Elec. Eng.*, 70:192-196 (Mar., 1951).

370. Relation between Teaching and Research. *Tech. Eng. News*, 32:6 (Jan., 1951).

371. Science and Security. In *Ohio State University, History of the Ohio State University. Vol. VI. Addresses and Proceedings of the Seventy-Fifth Anniversary, 1948-49.* (Columbus: Ohio State University Press, 1951).

372. *Universal Military Training. Foundation of Enduring National Strength. 1st Report to the Congress by the National Security Training Commission.* K.T.C. chairman (Washington, D.C.: G.P.O., Oct., 1951).

373. *Price of Liberty. Condensation of the 1st Report to the*

Congress by the National Security Training Commission. K.T.C. chairman (Washington, D.C.: G.P.O., Feb., 1952).

374. *Science and Human Values: A Pictorial Review.* Includes abstract of speech by K.T.C. (South Hadley, Mass.: Mount Holyoke College, 1952).

375. Science on the March. *Sci. Digest*, 31:9-14 (Feb., 1952); *Pop. Mech.*, 97:120-125 (Jan., 1952).

376. State of Science. In *Age of Danger*, by H. F. Harding, ed. (New York: Random House, 1952).

377. Case for National Security Training. *N.Y. Times Mag.*, p. 13 (May 3, 1953); *Readers' Digest*, 63:79-81 (Aug., 1953. Abridged).

378. Establishment of the Radiation Laboratory. In *M.I.T. Radiation Laboratory. Radiation Laboratory Series, V. 28. Index* (New York and London: McGraw-Hill, 1953).

379. Today's Challenge to the Family in Suburbia. *Tech.R.*, 56:201 (Feb., 1954).

EXECUTIVE DEVELOPMENT

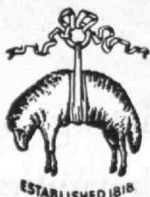
(Continued from page 95)

and challenges. Then the choice of a business career might be made on a par with that of medicine, teaching, law, and the applied sciences.

Business contributes vast sums of money annually to higher education, but it takes relatively little interest in providing that part of it be used to develop the human material for management. Consider how much more might be done via scholarships; by helping those through college who have leadership aptitudes, giving them summer jobs, advising them on courses to take. A relationship of that sort should pay off for both sides in the end.

(Concluded on page 114)

CHRISTMAS GIFTS THAT ARE DISTINCTIVE and not generally available elsewhere



At the sign of the Golden Fleece you will find, this Christmas Season, gifts that reflect the uncompromising standards of quality and workmanship which we apply to everything we make and demand in everything we sell.

We have an unusually wide selection of gifts for Men and Boys that are of good taste...that are unusual...and (what is so important to both giver and recipient) not generally obtainable elsewhere.

*Attractively illustrated Christmas Catalogue
will be sent upon request*

111 BROADWAY,
NEW YORK 6, N. Y.

46 NEWBURY, COR. BERKELEY,
BOSTON 16, MASS.

74 EAST MADISON STREET,
CHICAGO 2, ILL.

727 WEST SEVENTH ST.,
LOS ANGELES 17, CALIF.

165 POST STREET,
SAN FRANCISCO 8, CALIF.

ESTABLISHED 1818

Brooks Brothers,
CLOTHING
Mens Furnishings, Hats & Shoes

346 MADISON AVENUE, COR. 44TH ST., NEW YORK 17, N. Y.
BOSTON • CHICAGO • LOS ANGELES • SAN FRANCISCO

Will taxes make you Mr. A or Mr. B?

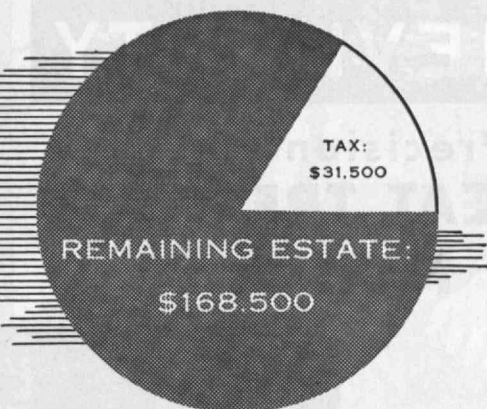
Mr. A's estate of \$200,000 paid a Federal tax of \$31,500.

Mr. B's estate of \$200,000 paid only \$4,800 in Federal taxes.

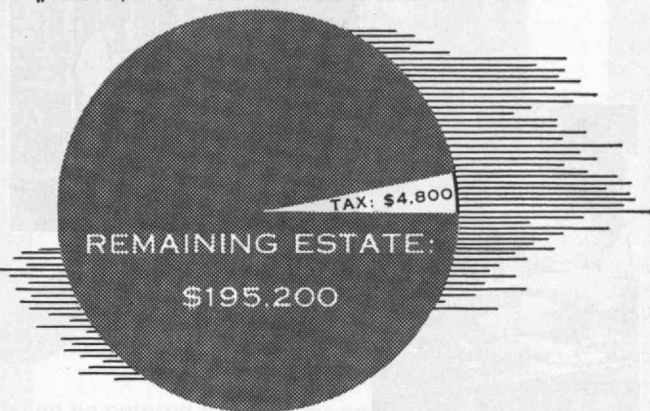
Mr. B cut the tax on his estate through planning. He took advantage of all the opportunities for cutting taxes that the law provides. Mr. A thought he was all set.

Although Mr. B was worth no more than Mr. A when he died, he was able to provide \$26,700 more financial protection for his family.

Don't take a chance on your family's future welfare. Plan your estate, with the advice of your lawyer, in a way that will cut out unnecessary tax losses. Every dollar saved means just that much more security for your family.



\$200,000 ESTATE OF MR. A



\$200,000 ESTATE OF MR. B

Our folder, "How Much Will Taxes Shrink Your Estate?", will enable you to estimate quickly the tax on your estate. That will help you decide whether you have taken full advantage of many well established methods of saving taxes. It is costly to overlook any of these.

Write or call our Trust Department for your copy of "How Much Will Taxes Shrink Your Estate?"

The New England Trust Company

Incorporated 1869

135 DEVONSHIRE STREET

At the Corner of Milk Street

BACK BAY BRANCH : : 99 NEWBURY STREET

Boston, Mass.



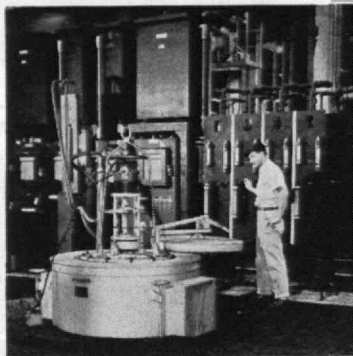
BANKING FOR
modern
NEW ENGLAND

Member
Federal Deposit
Insurance Corporation

HEVI DUTY

Precision Electric HEAT TREATING FURNACES

Industrial

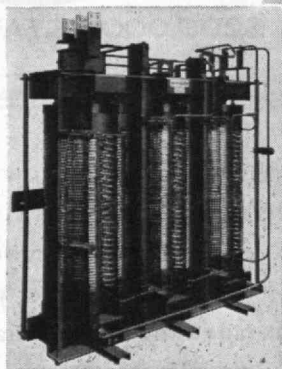


Laboratory

Dry Type
Air-Cooled

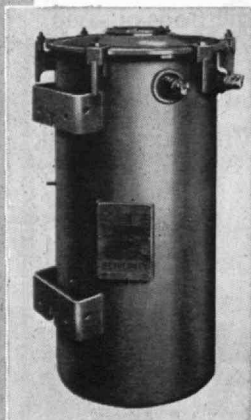
TRANSFORMERS

2 VA to
2000 KVA



Static Type

CONSTANT CURRENT REGULATORS



HEVI DUTY ELECTRIC COMPANY

MILWAUKEE 1, WISCONSIN

Harold E. Koch, '22, President

Elton E. Staples, '26, Exec. Vice President

Chester Meyer, '36, Works Manager

EXECUTIVE DEVELOPMENT

(Concluded from page 112)

Business educators have indicated many times that work-and-learn programs which provide direct contact between students and employers meet with their approval. It gives the pupil a chance to try his wings, in the business world while still learning.

Work-and-learn programs might also have a good effect on curricular and teaching methods. Considerable dissatisfaction has been voiced, by businessmen and even educators, about shortcomings of traditional teaching for business careers. One survey as to what employers think of students from schools of business scored the graduates' inability to communicate. The findings also showed that few students comprehend the purposes and problems of planning and control in business. Another was that courses in economics do not "build a bridge" between economic theory and business forecasting.

There is also evidence that aptitudes should be explored before the student matriculates. This applies equally to other courses, not only to business administration. As an example, a constant complaint among editors is that schools of journalism admit students who have no aptitude for writing. After two to four years of preparation, sometimes with excellent grades, these unfortunates discover that they cannot meet the tests of a job. A degree is not a substitute for the fundamental skill.

Once the student does successfully complete the transition from school to office, it is management's responsibility to keep him moving, and to keep adding to his chances for self-development. Some companies err by overdoing the situation, by making crown princes of potential executives, just as others err by treating able and ambitious young men as pages. Either way, promising persons are held apart, which makes things difficult all around.

The sound development program bridges these gaps, until the newcomers become "regulars" and move ahead with the group. If it also embraces the upper levels of middle management, as recommended before, the whole structure will be dynamic and leadership qualities will be nurtured until they flourish.

Seen in this light, the leadership development program is an adventure in creative business dynamics; it could be the answer to our need for personal significance in a mechanical universe. With its aid, we can look forward to the day when humanities will once again outstrip the sciences.

William H. Coburn & Co.

INVESTMENT COUNSEL

68 Devonshire Street

Boston

"The day my son's future began"



"Ken knocked around quite a bit after college. Tried several jobs and did well. But he was never really satisfied. He'd either get bored with the work or frustrated with routine advancement. I didn't worry though. He's bright, sensible, and I knew he'd establish himself soon enough.

"Then, about a month ago Ken breezed into my study and somewhat breathlessly announced that he'd decided to go into the life insurance business. Before I could even look surprised, he explained that he had always been interested in people and that this would give him an opportunity to work more closely with them. And his eyes brightened

when he pointed out how, as an agent, he'd be his own boss—running a business all his own.

"He went on at a mile-a-minute explaining how he'd be thoroughly trained by New York Life experts—with a good salary while learning. How he figured that once he was on his own he'd be able to give his future family the same kind of comfort and security he had always known at home. And he wound up telling me how, someday, he hoped to retire with a good income—just as I will soon myself.

"Then, quick as he came, Ken up and left without even asking what I thought. But of course he already knew. How could another New York Life agent possibly disagree?"

NEW YORK LIFE INSURANCE COMPANY



The New York Life Agent in Your Community
is a Good Man to Be!

MAIL THIS COUPON TODAY!

New York Life Insurance Company, Dept. A-2
51 Madison Avenue, New York 10, N. Y.

Please send your new booklet, "A Good Man To Be," with full
information about career opportunities with New York Life.

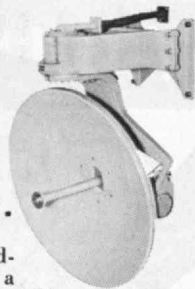
Name _____ Age _____

Address _____

City _____ Zone _____ State _____

Present Occupation _____

A Rewarding Career at **Airtron** INC.



Here's an opportunity for advanced microwave work with a company run by and for engineers. Your position is stimulating and your advancement gratifying when you join like-minded professional men at Airtron, Inc. Secure your place in a field with a future by joining one of America's leading designers and producers of microwave relay and radar components.

- 1 Profit sharing plan.
- 2 Subsidized tuition for advanced study.
- 3 Ideal suburban location in Metropolitan New York area.
- 4 Excellent schools and recreational facilities.
- 5 All the other usual benefits . . . paid holidays, vacations, credit union, etc.

Write or call Mr. A. Eckerson, Industrial Relations Director, Linden 3-3762

Airtron
INC.

1101 West Elizabeth Ave.
Linden, New Jersey

If You Need Additional Manufacturing Capacity

CALL IN

LIQUID's

CONTRACT MANUFACTURING DIVISION

◆ Capacity and manpower available on Machine Shop, Sheet Metal and Woodworking facilities for industrial or defense contracts.

Write for illustrated booklet "Special Contract Department" which lists and describes facilities.



Contract Manufacturing Division

THE LIQUID CARBONIC CORPORATION
3100 South Kedzie Ave. • Chicago 23, Illinois
Manufacturers of Brewing and Bottling Machinery, Soda Fountains,
Gas Welding Equipment, CO₂ Gas, Dry Ice, Oxygen and Medical Gases

KARL T. COMPTON: THE MAN

(Continued from page 88)

the effective help of Professor and Mrs Laurens Troost in Burton House, Professor and Mrs. Samuel J. Mason in Baker House, and Professor Avery A. Ashdown, '24, in the Graduate House.

Last spring, Professor C. Richard Soderberg, '20, Head of the Department of Mechanical Engineering, accepted the deanship of engineering, which had become vacant through the appointment of Admiral Edward L. Cochrane, '20, as Vice-president for Industrial and Governmental Relations. To succeed Dean Soderberg as Head of the Department of Mechanical Engineering, we turned to one of the senior members of the Department, and I am happy to announce to you the appointment of Professor Jacob P. Den Hartog to this important post. Several other administrative changes were made during the summer, including the appointment of Robert M. Kimball, '33, as Secretary of the Institute, the appointment of Paul V. Cusick and Delbert L. Rhind as Assistant Treasurers, and the appointment of R. Colin Maclaurin as Director of General Services (including the operation of dormitories and restaurants) and of Carl M. F. Peterson, '29, as Director of Physical Plant.

On August 1, Professor Edwin R. Gilliland, 33, finished two years of effective service as chairman of the Faculty and was succeeded by Professor Martin J. Buerger, '24, of the Department of Geology and Geophysics, our presiding officer today. And to our Corporation were elected at the June meeting Robert T. Haslam, '11, of New York; Ralph Lowell of Boston; Theodore V. Houser of Chicago; Horatio L. Bond, '23, of Boston; Ray P. Dinsmore, '14, of Akron; and William J. Sherry, '21, of Tulsa.

As a result of a study recently made by a committee of the staff under the chairmanship of H. Guyford Stever, Associate Professor of Aeronautical Engineering, the Institute has joined the Faculty Children Tuition Exchange Plan. This plan provides, subject to certain limitations, for full tuition remission for the children of our Faculty at M.I.T. or at any of 60 other member institutions. During the summer, the Executive Committee also approved a revised group

(Concluded on page 118)

THE MURRAY PRINTING COMPANY

A Complete Printing Organization
Specializing in Book Reproduction
Manuals and Reports

WAKEFIELD, MASSACHUSETTS

The TREDENNICK-BILLINGS CO.

Construction Managers

Building Construction

K. W. RICHARDS '07

H. D. BILLINGS '10

C. C. JONES '12

F. J. CONTI '34

10 HIGH STREET

BOSTON, MASSACHUSETTS

MELPAR

A COMPLETE FACILITY

has unusual advantages to offer
qualified engineers

RESEARCH • DEVELOPMENT • DESIGN • PRODUCTION

- Measuring Techniques and Fundamental Investigations of the Behavior of Mechanical Systems.
- Radioactive Tracer Techniques.
- Instrumentation and Control Devices (servo, pneumatic and electric control).
- Network Theory
- Data Handling Equipment (magnetic cores, magnetic recording equipment, digital computing techniques, analogue to digital conversion shaft digitizers).
- Flight Simulation (servo-mechanisms, pulse circuitry, electronic cabling).
- High Frequency Antennas.
- Audio and Video Circuit Designs.
- Small Mechanisms Design.
- Mechanical Packaging of Electronic Components.
- Design of Reciprocating Compressors, Hot Gas Generators and Diesel Engines.

Please send inquiries for additional
information to

DEPT. T.P.101

MELPAR, INC.

452 SWANN AVENUE

ALEXANDRIA, VIRGINIA



452 SWANN AVENUE • ALEXANDRIA, VIRGINIA
11 Galen Street • Watertown, Mass.
A SUBSIDIARY OF THE
WESTINGHOUSE AIR BRAKE COMPANY

ANOTHER BIG HIT!!

Will you be with us when a steak dinner is served
to more than 500 at the Alumni Association's Mid-
Winter Meeting on Thursday, February 3? Total cost:

\$1.50 per person.

We are proud of serving M.I.T. alumni and
friends in this fashion. We are also proud
of our annual service of 1,000,000 meals to
staff and students this past year. We know
M.I.T. alumni are proud of this record,
made possible by their gift of the Walker
Memorial Building in 1917.

Walker Memorial Dining Service

M.I.T.

Cambridge 39, Massachusetts
R. J. RADOCHIA, MANAGER

GANNETT FLEMING CORDDRY AND CARPENTER, INC.

Engineers

HARRISBURG, PA.

Branch Offices:

Pittsburgh, Pa.

Daytona Beach, Fla.

Philadelphia, Pa.

Expressways, Toll Roads, Bridges and Airports. Traffic & Parking. Dams, Water Works, Sewage, Industrial Wastes
and Garbage Disposal. Appraisals, Investigations and Reports.



HOLMES & NARVER, INC.

ENGINEERS • CONSTRUCTORS

JAMES T. HOLMES
M.I.T. '14

D. LEE NARVER
STANFORD '14

828 S. Figueroa St., Los Angeles 17, California

Telephone TRINITY 8201

SYSKA & HENNESSY, INC.

Engineers



DESIGN • CONSULTATION • REPORTS

POWER PLANT • WASTE DISPOSAL • WATER SYSTEMS

New York City

CHAUNCY HALL SCHOOL

Founded 1828. The School that specializes in the preparation of students for the Massachusetts Institute of Technology.

Ray D. Farnsworth, Principal 533 Boylston Street, Boston, Mass.

LEONARD CONSTRUCTION COMPANY

Engineers and Contractors

SINCE 1905

IN THE AMERICAS AND FAR EAST

37 South Wabash Ave.

Chicago

N. A. LOUGEE & COMPANY

ENGINEERS AND CONSULTANTS

Reports—Appraisals—Depreciation Studies
Rate Cases—Business and Economic Studies

120 BROADWAY

NEW YORK 5, N.Y.

N. A. LOUGEE '11 L. A. MATTHEWS '13
J. W. McDONALD, Jr. '20 B. F. THOMAS, Jr. '13
E. S. WEST '40

KARL T. COMPTON: THE MAN

(Concluded from page 116)

life insurance program which doubles the amount of such insurance available.

These actions are all part of a developing pattern for providing additional supplementary benefits to the Faculty.

During the past academic year, the Institute provided loans and scholarships to students in an amount exceeding \$1,000,000—a substantial increase over any previous year. This amount of student aid, which amounts to nearly 25 per cent of all tuition paid to the Institute, does not include nearly \$1,000,000 earned in salaries and wages by students who had jobs at the Institute.

During the past five years, gifts to the Institute have averaged \$6,700,000 a year. As a consequence of this and of careful economies, we continue to balance our budget and to make modest additions to our endowment. As of June 30, our endowment and other invested funds had a book value of \$63,000,000 and a market value of \$85,000,000.

These developments at the Institute are but projections of the influence and leadership of Karl Compton. It is our obligation and opportunity to continue to work toward the goals he envisaged for the Institute and its people, and M.I.T.'s continued success and steady advance will be the most appropriate memorial we could create for him.

In contemplating the heartbreaking loss we have suffered in his death, we can overcome the deep sense of tragedy only by thus striving to keep him a living influence in our midst and thereby continuing to experience a sense of gladness and delight in his abiding and unforgettable greatness.

J. C. CORRIGAN CO., INC.

Conveyers

ENGINEERS • MANUFACTURERS • ERECTORS

Coal Handling Systems
Material Handling and Processing Equipment
Portable Conveyers

Distributors for
Jeffrey Manufacturing Co.

41 Norwood Street, Boston 22, Mass.
Tel. GENEVA 6-0800

A. J. WOLFE CO.

Electrical Construction

27 HAYMARKET SQUARE

BOSTON 14, MASS.

G. M. Wolfe
M. I. T. '40

E. H. Wolfe
Tufts '49

PROFESSIONAL CARDS

JACKSON & MORELAND *Engineers and Consultants*

DESIGN AND SUPERVISION OF CONSTRUCTION

REPORTS—EXAMINATIONS—APPRAISALS

MACHINE DESIGN—TECHNICAL PUBLICATIONS

BOSTON

NEW YORK

LESSELLS AND ASSOCIATES, INC. *Research—Development—Testing—Consultation* Mechanical Engineering—Mathematical Physics Electronics

Write for Brochure

916 Commonwealth Avenue

BEacon 2-2380

Boston 15, Mass.

P. E. Kyle '39

T. A. Hewson '45

C. H. Kano '43

R. F. Brodrick '48

A. A. Kheiralla '47

EADIE, FREUND AND CAMPBELL CONSULTING ENGINEERS

500 FIFTH AVENUE

NEW YORK 36, N. Y.

Mechanical — Electrical — Sanitary

Air Conditioning — Power — Process Layouts

J. K. Campbell, M.I.T. '11

GIVEN BREWER

Consulting Engineer

Electric Strain Gage Analysis • Stress Analysis

MARION, MASS.

TEL. 103, 110

G. A. Brewer '38

THE KULJIAN CORPORATION Consultants • Engineers • Constructors UTILITY • INDUSTRIAL • CHEMICAL

1200 N. Broad St., Phila. 21, Pa.

MEXICO CITY • CARACAS • MADRID • ROME • ATHENS • TOKYO
• CALCUTTA •

H. A. Kuljian '19

A. H. Kuljian '48

FABRIC RESEARCH LABORATORIES

Incorporated

*Research, Development and Consultation
for Textile and Allied Industries*

665 Boylston Street

Boston, Mass.

W. J. HAMBURGER, '21

K. R. FOX, '40

E. R. KASWELL, '39

GILBERT ASSOCIATES, INC.

ENGINEERS • CONSULTANTS • CONSTRUCTORS

607 WASHINGTON ST.
READING, PA.

Malcolm G. Davis '25, Vice President Allen W. Reid '12, E. C. Edgar '35
Steam, Hydro, Diesel Power Plants; Industrial Structures;
Plant Safety, Labor Relations, Utility Rates, Valuations,
Reports; Large Scale Purchasing; Industrial Laboratory
New York • Philadelphia • Washington

FAY, SPOFFORD & THORNDIKE

Engineers

John Ayer, '05

Bion A. Bowman, '09

Carroll A. Farwell, '06

Ralph W. Horne, '10

William L. Hyland, '22

Frank L. Lincoln, U. of Me., '25

Howard J. Williams, '20

AIRPORTS — BRIDGES — TURNPIKES
WATER SUPPLY, DRAINAGE AND SEWERAGE
PORT AND TERMINAL WORKS

BOSTON

NEW YORK

CLEVERDON, VARNEY & PIKE

Consulting Engineers

HERBERT S. CLEVERDON '10

WALDO F. PIKE '15

Structural Designs

Foundations

Heating Ventilating and Plumbing Designs

Industrial Buildings, Reports, Investigations

120 TREMONT STREET

BOSTON 8, MASS.

MAURICE A. REIDY

Consulting Engineer

BRIDGES

BUILDINGS

STRUCTURAL DESIGNS

FOUNDATIONS

CONSTRUCTION CONSULTANT AND ARCHITECTURAL ENGINEER

Estimates and Appraisals

101 TREMONT STREET

BOSTON, MASS.

CHARLES NELSON DEBES AND ASSOCIATES

ENGINEERS AND CONSULTANTS

Architectural — Mechanical — Electrical — Structural

Management — Plant Layout — Material Handling

Acoustical

ROCKFORD TRUST BLDG.

ROCKFORD, ILL.

C. L. EMERY '32

C. N. DEBES '35

R. S. KNOWLAND '40

MORAN, PROCTOR, MUESER & RUTLEDGE

CONSULTING ENGINEERS

Foundations for Buildings, Bridges and Dams;

Tunnels, Bulkheads, Marine Structures, Soil Studies and

Tests; Reports, Design and Supervision

WILLIAM H. MUESER '22

PHILIP C. RUTLEDGE '33

CHARLES A. MAGUIRE & ASSOCIATES

ENGINEERS

PROVIDENCE

BOSTON

CAPITOL ENGINEERING CORPORATION

CONSULTING ENGINEERS

Design and Surveys

Roads and Streets

Sewer Systems

Water Works

Planning

Airports

Bridges • Turnpikes • Dams

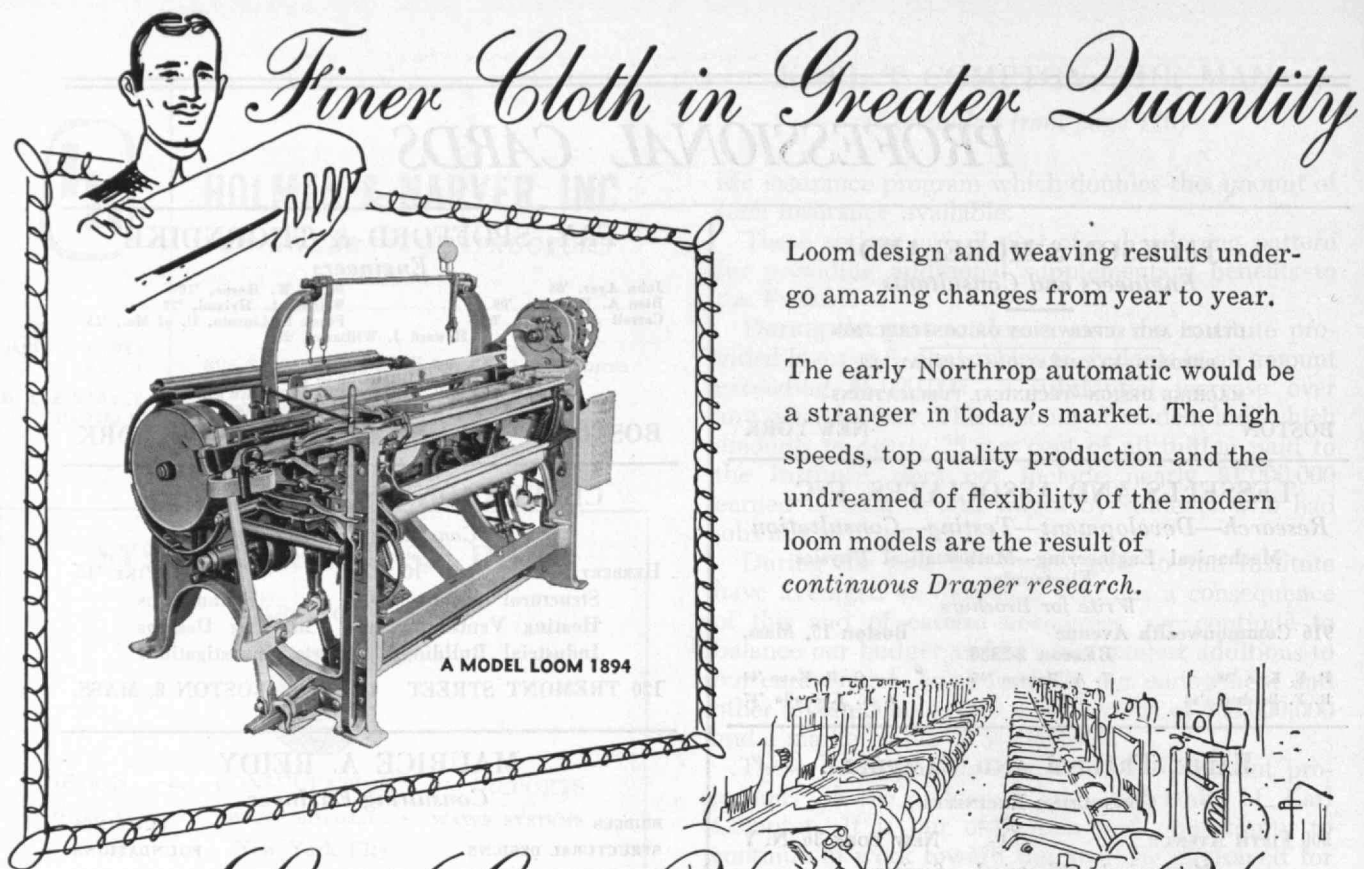
Executive Offices

DILLSBURG, PENNSYLVANIA

Dallas, Texas

Rochester, N. Y.

Robert E. Smith '41, Vice President



Finer Cloth in Greater Quantity

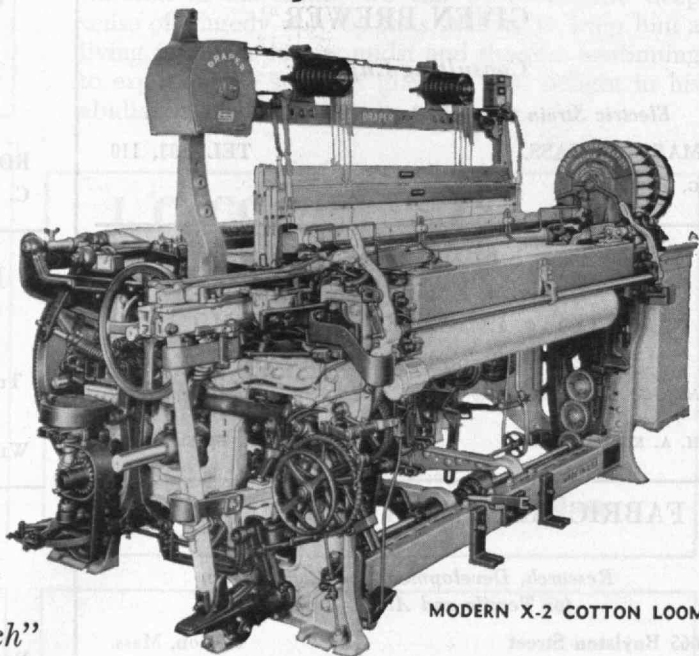
Loom design and weaving results undergo amazing changes from year to year.

The early Northrop automatic would be a stranger in today's market. The high speeds, top quality production and the undreamed of flexibility of the modern loom models are the result of *continuous Draper research.*

at Less Cost Year after Year

Perhaps one of the nation's first industries to undertake a realistic program of research, Draper Corporation will consistently offer better weaving methods to cost conscious mill owners and operators.

Protect your weaving investment year after year with Draper — *World's largest manufacturer of automatic looms.*



"Retaining Leadership through Research"



DRAPER CORPORATION

ATLANTA, GA.

HOPEDALE, MASS.

SPARTANBURG, S.C.

THE WORLD'S LARGEST MANUFACTURER OF AUTOMATIC LOOMS

1955 Alumni Register

The First Book Since 1948 Listing All

Former Students of M.I.T.

(Published by the ALUMNI ASSOCIATION)

JUST before Labor Day, 45,017 announcements of the forthcoming publication of the 10th Edition of the M.I.T. ALUMNI REGISTER went into the mails addressed to the membership of the Alumni Association . . . each addressee being asked to verify the data for *his listing in the new book* as tentatively set forth from our records on an enclosed IBM card.

The unprecedented response has far exceeded the hopes of the undersigned Editors of the 1955 REGISTER . . . for within the first 60 days *over one-half* of the 45,017 data cards had been checked and returned. Such widespread Alumni interest in the 10th Edition is evidenced by the corresponding experience figures for the 1948 REGISTER, viz.

	1955	1948
Queries Sent	45,017	37,200
Verified Replies	24,877	12,354
in 60 days		
Percentages	55%	33%

More checked data cards are coming back every day, and clearly this signifies that in *completeness and accuracy* the editorial standard of the 1955 REGISTER will surpass those of its predecessors.

FORTY-SIX years ago next March, the 1st Edition of the REGISTER, dated 1909, made its bow and blush, listing 9,978 Alumni from "Abbot, Bessie Owen'99" to "Zuest, Adolph Jr.'07." At intervals of approximately five years, subsequent editions have appeared, the most recent being the 9th, dated 1948.

Besides Alumni, members of the then current student body, who would become Alumni during the "life" of the 1948 REGISTER, were included in its *Alphabetical-Living* section. Thus this section listed 41,978 names from "Aall, Jacob'50" to "Zych, Edward Albert'46."

Including present Alumni and the 1954-1955 student body, the *Alphabetical-Living* section of the 1955 REGISTER will contain an estimated 56,000 names—each with Class numerals, Course, and all M.I.T. degrees received . . . and with address, position held, and firm name *wherever it is possible to obtain such verified information, as illustrated below:*

DODSON
—Frederick W 17 XIV SB Patent Lawyer Union Carbide & Carbon Corp 30E 42 St NYC
—J Lincoln 22 II SB Mech Engr Lehigh Valley Coal Co 133 N River St Wilkes Barre Pa
—John L 31 X SB Sr Project Engr Catalytic Const Co 1528 Walnut St Phila Pa
—Joseph E 40 SM Capt USN Naval Air Turbine Test Station Trenton NJ
DOE Albion N 20 XV SB Prof Univ of Bridgeport Ind Eng Dept 219 Park Ave Bridgeport Conn
DOEBLER H Ward 22 I Engr Turner Const Co 420 Lexington Ave NYC
DOELGER William E P 26 VII SB VII SM Pres Peter Doelger Inc 407 E 55th St NYC
DOELLING Norman 53 VIII SB 15 Highview Dr Huntington NY
DOERING August P 50 VII SB Celanese Corp of America Summit NJ

EDITORIAL work on the *Alphabetical-Living* section of the 10th Edition has been underway since early November, and will continue without interruption to January 31, on which date we will begin sending 'copy' to the printer. Since this section will extend over 360 pages of text, it has been agreed no further changes are to be permitted once a listing has been set in type. To do otherwise inevitably would disrupt press-room and bindery timings and seriously delay the appearance of finished clothbound books.

Meanwhile, early in January, compositors will be busy setting type for other sections of the 10th Edition as follows:

(1) *Members of the Corporation since 1862*, over 375 names with dates of service;

(2) *Members of the Institute Faculty and Staff since 1865*, over 9,435 names with the Institute Departments in which they served or are serving, and their dates of service;

(3) *Deceased Alumni*, now totalling more than 11,280, whose names will be listed alphabetically in two ways: as a complete roster with Class numerals, and grouped according to Classes.

When type-setting on the *Alphabetical-Living* section is finished early in March, the IBM data cards will be mechanically sorted to obtain 'copy' for the two remaining sections of the 1955 REGISTER, those which cross-reference the names according to *Class* and *Geographically*.

PRESS-WORK on the last sections of the new book is to commence not later than April 1, five weeks being allotted to the printer between that date and the time when finished copies are to start emerging from the bindery. Before the end of May, therefore, we expect to fill all *advance orders* received.

COMPILATION of the 700 text-pages of a reference book such as the 10th Edition of the REGISTER is an expensive undertaking. For the 9th Edition, a book of 607 pages, the outgo exclusive of printing and binding came to \$19,586 . . . at 1947-1948 prices! For the 1955 REGISTER we have budgeted these costs at \$29,034; and for printing and binding we have budgeted \$31,449 compared with an outgo of \$26,261 for the 1948 book. Thus in round numbers, we anticipate that it will cost \$60,000 to produce and deliver 10,500 copies of the new book.

SALES of the 1948 book totalled 9,531 copies, of which 8,416 were subscribed for *in advance*; and for the 1955 book we have "budgeted" total sales at 10,500 copies. Hence, the Executive Committee of the Alumni Association established the selling price of the 1955 REGISTER at \$6.00 per copy . . . with the proviso that sufficient copies to fulfill *advance orders* (of which 4,534 had been received up to the end of October) be *clothbound*, and that the balance of the 10th Edition be bound in paper covers.

H. E. LOBDELL'17 }
D. P. SEVERANCE'38 } *Editors*

YOUR M.I.T. ALUMNI REGISTER

ORDER YOUR CLOTH BOUND COPY IN ADVANCE (SIX DOLLARS A COPY)
(PAPER BOUND COPIES AFTER PUBLICATION DATE)

ENCLOSED IS \$..... FOR COPIES OF THE
1955 ALUMNI REGISTER

NAME
PLEASE PRINT

STREET ZONE

CITY STATE

MAKE CHECK PAYABLE TO THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Alumni AND Officers IN THE News

Front and Center

ADMIRAL LUIS DE FLOREZ'11 has been elected a director of Pioneer Parachute Company of Manchester, Conn.

JOHN W. CHAMBERLAIN'28 has been appointed Surgeon-in-Chief for pediatric surgery by the Trustees of the Boston City Hospital, and has been promoted to assistant professor of surgery in the School of Medicine for 1954-1955 by the President and Board of Trustees of Boston University.

NEIL A. CONNOR'32 has been appointed director of architectural standards for the Federal Housing Administration "to blueprint improved housing standards in America."

STUART T. MARTIN'34 has been appointed vice-president and general manager of the WCAX Broadcasting Corporation, Burlington, Vt.

WILLIAM W. BUECHNER'35, M.I.T. Associate Professor of Physics in charge of the Office of Naval Research Van deGraaff Generator Group, has been named a director of High Voltage Engineering Corporation, Cambridge, Mass.

GEORGE S. TRIMBLE, JR.'36, has been elected a vice-president of Martin Aircraft Company.

RICHARD B. YOUNG'38 has been elected treasurer of the Acushnet Process Company.

MAJOR WILLIAM H. BEST, JR.'43, operations analyst for the U. S. Air Force Air Weather Service headquarters in Washington, D. C., has been appointed to take part in an international meteorological research project at the Institute of Meteorology, University of Stockholm, Sweden.

In Stockholm, Major Best will be part of a group working on meteorological problems with international ramifications. He will be concerned with numerical weather prediction: Including the use of electrical computers in making weather forecasts.

HENRY M. TIEDEMANN'43 has been elected assistant vice-president by the Board of Directors of Grace Line, Inc. In his new position Mr. Tiedemann will continue to be concerned primarily with the plans for the design and construction of the two new passenger ships which will be built for Grace Line in the near future.

DAVID R. HERWITZ'6-46, has been appointed assistant professor of law at the Harvard Law School for 1954-1955.

JAMES S. ROWLEY'50 has been appointed architectural design critic in the Division of Planning at Rhode Island School of Design.

WORTH NOTING

THOMAS W. MACKESY'32 is a member of a team of experts who are working on the problem of pinpointing the location of a new capital of Brazil. Because of the overpopulation, inadequate water supply, and hot and humid climate of Rio de Janeiro, the present capital, the Brazilian government has decided to build a new city in the interior. Mr. Mackesy is Dean of the College of Architecture of Cornell University, and is a consultant to D. J. Belcher and Associates, Inc., of Ithaca, N.Y., one of the foremost experts in the world on interpretation of aerial photographs.

In High Esteem

WILLIAM E. MITCHELL'03, former president of the Georgia Power Company, was named Chevalier in the National Order of the French Legion of Honor in October. The distinction was bestowed upon Mr. Mitchell in recognition of his "constant and active friendship" to France as a United States government appointee on the special mission to aid the restoration of French industry after World War II.

RALPH WALKER'11 has received the Gold Medal of the Philadelphia Chapter of the American Institute of Architects with this citation: "To Mr. Ralph Walker: Scholar and architect; a man broad in his learning and in his achievement, whose architectural works on many different programs are found in many parts of this country and others. Member of the National Institute of Arts and Letters, of the National Academy of Design, Past President of the Architectural League, of the Municipal Art Society, of the American Institute of Architects, and first Chancellor of its College of Fellows."

"The Philadelphia Chapter of the American Institute bestows its gold medal to mark completion of his Chancellorship in testimony of his leadership in the profession."

EDMUND Q. SYLVESTER'34, Executive Vice-president of the Griffin Wheel Company, has been named to receive the Melville Prize Medal. The award, which is administered by the board on honors of the American Society of Mechanical Engineers, is conferred annually for the best original paper on a mechanical engineering subject presented to the Society for discussion and publication.

Obituary

LEWIS A. DUNHAM'91, April 14.
FRANCISCO DE MIRANDA PINTO'91, October 26, 1951.
HORACE C. HARTSHORN'92, September 28.
JESSE B. BAXTER'93, October 12.
FREDERICK S. BIGELOW'94, September 29.
CHARLES P. COOKE'95, September 2.
GEORGE C. GREENE'95, September 3.
RUDOLF F. HAFFENREFFER, JR.'95, October 8.
ARTHUR F. NESBIT'95, June 6.
JOHN A. COLLINS, JR.'97, August 14.
ETHAN H. HOWARD'97, October 1.
ERNEST F. LEARNED'97, May 30.
HUNTLY W. DAVIS'98, October, 1952.
GRANVILLE SMITH'98, July 22.
HORACE R. THAYER'98, September 25.
ALICE L. FERNALD'99, September 27.
EVERETT E. GOODSELL'99, July 26.
LESTER A. NEWELL'99, September.
AURIN M. CHASE'00, July 5, 1953.
LOUIS A. CROWELL'00, September 1.
AUSTIN D. JENKINS'03, April 29.
WILLIAM L. WING'03, September 18.
ARTHUR G. SNYDACKER'04, June.

LEMUEL D. SMITH'06, October.
CHARLES M. CURL'07, October.
JOHN H. LEAVELL'07, September, 15.
JAMES A. McELROY'07, October 4.
EDWARD H. SARGENT'07, October 9.
BASIL L. GIMSON'08, May 28, 1953.
MAURICE P. MEADE'08, October 4.
C. HAMILTON PRESTON'08, April 14.
FREEMAN E. TOWLE'08, January 8, 1950.
RALPH A. D. PRESTON'10, May 16.
HOWARD R. SCHULTZE'11, July 2.
SAMUEL H. SCRIBNER'11, October 1.
LESTER A. STOVER'11, December 1, 1952.
GEORGE H. ABEL'12, November, 1952.
CHARLES P. ECHEVERRIA'12, August 9.
EDWIN C. GERE'13, September 10.
GEORGE H. TABER, JR.'13, August 21.
ROYAL W. WETHERALD'15, April 23, 1953.
EMERY C. CARTER'16, July 17.
HORACE E. HALL'16, October 2, 1952.
WILLIAM W. HAMILTON'16, July 30.
GOTTHOLD H. MEINZER'16, February.
LYMAN QUINCY'16, August.
ARTHUR C. REYCROFT'16, August.
THOMAS H. WHITE'18, October 26, 1951.
HARRIS KENNEDY'19, September, 1951.
W. BARRINGTON MILLER'19, February.
RALPH E. TRIBOU'19, October 1.

SAMUEL A. MILLIKEN'20, August 19.
LEWIS A. NICKERSON'21, February 18.
HAROLD E. SMYSER'21, January 28.
CHRISTOPHER L. TORTORELLI'21, February 22, 1951.
WILLIAM T. ROTH'23, May 5.
EDWARD S. SMITH'24, May 19.
WILFRED L. IRVINE'26, December 20, 1952.
JOHN H. HOPKINS'27, August 16.
SILAS M. THRONSON'28, October 4.
PAUL BOHANON'29, September.
WALTER E. GIST'29, September 3, 1953.
EDWARD J. MACK'32, April 27.
BURT E. MORITZ'33, May 4.
LESTER L. LEAVENWORTH'34, September 5.
GEOFFREY BROUGHTON'36, September 10.
JAMES M. GILLISS'38, October 23.
JULIAN M. BARRON'40, March 22.
WILLIAM G. TULLER'42, September 5.
WALTER DAVIDZICK'43, August 28.
FREDERICK A. RUSSELL'45, September 22.
FRANK N. FULTON'50, October 6.
ERNEST J. GARBARINO'51, June 19.
FRANK H. PLUMMER'51, April 1.
* Mentioned in Class Notes.

News FROM THE Clubs AND Classes

CLUB NOTES

M.I.T. Club of Buffalo

The traditional summer stag outing of the Club was held on August 16, 1954, again at the home of Roswell E. Pfohl'17. In spite of the rain, 30 Buffalo Alumni enjoyed the wonderful time that comes when good fellows get together and the excellent food prepared by Joe Engel'37 and his committee. Noteworthy were the clams Casino and clam broth cooked by Ehrler Wagner'37. — BENJAMIN C. BUERK '30, *Secretary*, 315 Grote Street, Buffalo 7, N.Y.

M.I.T. Club of Chicago

The Club entered the 1954-1955 year under the guidance of President Bob Wise'28, assisted by Al Alschuler, Jr., '35, Vice-president, John Wills'26, Treasurer, and Bob Faurot, 2-44, *Secretary*. New additions to the directors' roster are Otto Eitel'24, Bob Gunness'34, and Hal Davis '40. The new officers inherited an active club from the past administration led by Dick Meyer'42 and started the year with 900 Alumni on the mailing list and no outstanding debts.

The opening event of the season's program was announced as "An evening in a Television Studio." It was held on October 14 with over 200 members, wives, and guests in attendance. Bud Meissner '43 handled the arrangements for the dinner at Henrici's restaurant in the Merchandise Mart and for the after dinner visit to the television studios of the National Broadcasting System located in the same building. Following the usual pleasant cocktail hour and a hearty dinner, elevators took the group to the 19th floor where NBC general manager Henry J. Sjogren and assistant manager George Heinemann were on hand to welcome us.

Although the station management had planned on a smaller group which could watch a live broadcast, they demonstrated their flexibility by making radical last minute changes to accommodate the two hundred guests and even produced overnight a special show for the M.I.T. group. The production manager opened the program by explaining that the script had been written with the thought that the M.I.T. audience would be an all male group. His remarks were greeted by eager shouts from the wives of "on with the show." Thus we watched an interesting television skit, the plot of which was about how a Tech undergraduate lost the affections of his true love to a professor. We were shown the immense amount of planning, preparation, and rehearsing which lies behind a television show. The climax of this part of the program came when the show was actually televised and at the same time shown to us on sets

set up along the sides of the studio. Following this, members of the engineering staff explained the functioning of a television camera, of the controls which enable all of the cameras and lights and other components to be brought together to form the picture seen on the screen, and of the traveling studio which is used to televise news on the spot and similar items. Altogether it was a most interesting evening, and the Club is indebted to the National Broadcasting Company for their efforts on our behalf.

The large group which turned out for the NBC trip included many familiar faces. We were also pleased to see a number of new faces, a few of whom were some of the 28 new members of the Club who graduated from the Institute in the Class of 1954 and who we are glad to welcome to our ranks. — ROBERT S. FAUROT, *Secretary*, 4115 Ogden Avenue, Chicago 23, Ill.

M.I.T. Club of Cleveland

The Association commenced its 1954-1955 season with one of the most successful meetings it has had. Through the good offices of our President, Bill Robinson'24, we had a splendid party at the Nela Park establishment of General Electric Company which included a social hour, dinner, a tour guided by Willard Brown'16, through the General Electric Lighting Institute, showing of a newly released motion picture on "The Story of Light," and, finally, a stage demonstration covering many fascinating phases of lamps and lighting. Because of the advance interest in this meeting, it was set as the annual Ladies Night Meeting. There were a total of 98 persons present, about 55 members and 43 best girls. We were very happy to have so many of the ladies with us. It is also specially noteworthy that there was a large turnout of the younger members and recent graduates.

The social hour took place in the Lighting Institute lounge, and the large crowd, pretty Institute hostesses and the cocktail bar all contributed to a gay and friendly atmosphere. During dinner, President Robinson introduced the other officers (Fred Reuter'38, Vice-president; Jay P. AuWerter'38, Treasurer). He also announced that the M.I.T. Alumni Fund for the current year would be devoted to creation of a living memorial to Dr. Compton, a new nuclear science building bearing his name. The recent outstanding successes of the M.I.T. crew and sailing team were duly noted.

The program for future months promises to be equally as good as our kickoff meeting. Next on the schedule is the annual luncheon during the week between Christmas and New Year's Day with the M.I.T. students home for the holiday vacation. In the planning stage is a dinner meeting at the Cleveland Clinic with a tour and demonstration of its unusual medical research facilities. Members will

receive the customary announcements of future events, and we hope that *you* will be present for them. — HERBERT J. HANSELL, 2-46, *Secretary*, 1759 Union Commerce Building, Cleveland 14, Ohio.

M.I.T. Club of Hartford

The Club has tentatively planned the following schedule for the 1954-1955 season: December — Jack Fraley, Coach of the M.I.T. 150-pound crew, to give an illustrated talk on the Henley Regatta; February — we hope to have Irwin H. Schell'12, Professor of Industrial Management; April — John Arnold'40, Associate Professor of Mechanical Engineering, will present a talk on the subject of "Creative Engineering."

The annual meeting to be held in June will be a joint meeting with the M.I.T. Club of New Haven and will probably be held at the Pine Orchard Country Club. Any members of the M.I.T. Club of Hartford who are not receiving meeting notices please contact the Secretary. — CHARLES P. BRITTON'33, 15 Lewis Street, Hartford, Conn.

M.I.T. Club of Northern New Jersey

Clarke Williams'24, Chairman of the Nuclear Engineering Department at the Brookhaven National Laboratory in Upton, Long Island, was the speaker at the first meeting of the 1954-1955 year held on September 30 at the Hotel Suburban in East Orange. More than 100 stalwart members attended this meeting which was one of the best pacesetters for a coming year's activities the Club has had in recent years.

Before the talk by Dr. Williams, President Jack Andrews'33 opened the session on a brief business meeting to give the Club the final report on last year's activities by the various committee chairmen and to bring before the Club an important proposal which was made by the Board of Governors at their meeting of September 14. The proposal is that the Club sponsor a scholarship of \$500 or more which would be known as the 20th Anniversary Scholarship Fund of the M.I.T. Club of Northern New Jersey, and would be given in the Spring of 1955 to a graduate of a secondary or preparatory school in New Jersey, and who would be selected by the Club based upon qualifications established by the latter. Members were asked to fill out unsigned questionnaires telling whether or not they were in favor of such a scholarship and if so, their preference either for or against a general solicitation among Club members for raising the necessary funds. If the last question were answered affirmatively, the member was then asked the amount he was willing to give. The results of this questionnaire are to be collated and appraised by the chairmen of the Finance, Scholarship and Educational Council

Committees before the next meeting when the question is to be put before the Club.

A final report on the Club's fiscal operations for 1953-1954 was given by Treasurer Joe Wenick'21. The Club had a total income for the year of \$1,338; dues accounting for \$995 and receipts from meetings contributing \$343. Deducting total expenses of \$1,304.46 left a net excess income over expenses of \$33.54 which, when added to the cash on hand as of September 1, 1953 of \$830.26, resulted in an accumulated cash on hand as of September 1, 1954 of \$863.80.

After introducing the new officers and committee chairmen for the coming year, President Andrews closed the business portion of the meeting and introduced Clayton D. Grover'22, President of Whitehead Metal Products Company, Inc., who emceed the program for the evening. Mr. Grover introduced the guest speaker, Dr. Clarke Williams, who spoke on "The Applications of Radioactivity to Industry."

Dr. Williams concluded his talk with a lively question and answer period during which many other interesting facets of the application of radioactivity to industry were brought out. This discussion was highly enjoyed, as was the talk itself.

Following Dr. Williams's talk a most interesting color movie entitled "Inside Tibet," was shown. This film was made by two Army officers on an OSS mission to Tibet in 1942 to deliver President Roosevelt's message to the Dalai Lama, boy leader of the Tibetans. These were the first pictures out of Tibet, a civilization unchanged since the time of Marco Polo. The movie showed the grandeur of this mountainous wilderness as a background to the primitive agrarian techniques of the people and their culture. The people wear colorful, rather bulky and sometimes highly ornamented clothing, practically all of which is homespun. Scenes were also included showing some of the rituals and ceremonies of their seemingly polytheistic religion.

Refreshments of sandwiches, pretzels, beer, and soft drinks were in plentiful supply and the crowd lingered long in the social wind-up of the evening. The next meeting is scheduled for Wednesday, December 1, at the Hotel Suburban in Summit. — STUART G. STEARNS'39, *Secretary*, 25 Elmwood Place, Short Hills, N.J.; JOHN T. REID'48, *Assistant Secretary*, 80 Renshaw Avenue, East Orange, N.J.

M.I.T. Club of Rochester

Warm weather and sunny skies favored the 1954 annual meeting and steak roast held at Mendon Ponds on September 25. The Club officers elected at the meeting were: Dwight Vandevate, Jr.'22, President; Richard M. Wilson'30, President-elect; V. Nelson Hansford'37, Vice-president; William N. Hosley'48, *Secretary*; James K. Littwitz'42, *Assistant Secretary*; Charles C. Park'50, *Treasurer*. Also elected to join Alfred E. Castle'40 and Frederick F. Tone'35 on the Executive Committee was Alvin H. Hartman'41. Past-president Clarence L. A. Wynd'27 announced plans for the Club's George Eastman Night to be held on December 4. This meeting, which ties in with other observations of the centennial

of George Eastman's birth, is being held to pay tribute to one of the Institute's greatest benefactors. The 47 members present at the annual meeting greeted the announcement of this occasion with great enthusiasm. — JAMES K. LITTWITZ'42, *Secretary*, 191 Rogers Parkway, Rochester, N.Y.

M.I.T. Club of South Florida

Regular meetings were suspended during the summer, but there were two enjoyable get-togethers of the members and their families. On the evening of July 4 at the Gershwin Pops Concert in the Miami Beach Auditorium, and on the afternoon of August 7 a social gathering at the Kenilworth Hotel in Bal Harbour, where swimming and other sports were enjoyed by the entire family.

The September meeting was also a social gathering, being a picnic at Matheson Hammock, south of Miami, on Sunday, September 19. Charcoal broiled steaks and other good things to eat were enjoyed by a large gathering of members and their families. The regular evening meetings were resumed in October, too late to make the deadline for this issue of *The Review*. — DONALD S. WHITMORE'51, *Secretary*, 2191 S.W. 11th Street, Miami, Fla. KENNETH P. ARMSTRONG'10, *Publicity Committee*, 1240 Sesame Avenue, Opa Locka, Fla.

M.I.T. Club of Washington

The second meeting of the Club for this year was held Thursday, November 4, at the Cosmos Club, 2121 Massachusetts Avenue, N.W., Washington, D.C., and featured a talk by Mr. Joseph Volpe, Jr. Dinner was served at 6:30 and preceded by cocktails.

Mr. Volpe is a dynamic speaker and an outstanding personality in the field of atomic energy. He was special assistant to the Commanding General of the Manhattan District and later was consultant on atomic energy matters to Bernard Baruch, then U. S. Delegate to the United Nations. He recently resigned as general counsel of the Atomic Energy Commission. As a private attorney he now represents the state of Tennessee in the Dixon-Yates controversy. The subject of Mr. Volpe's talk was "Controversial Policies in Atomic Energy," and he touched upon the Oppenheimer case, the Dixon-Yates controversy, and the government-industry patent situation in atomic energy.

The third meeting, on January 27, 1955, will also be a dinner meeting and will feature a talk by The Honorable Donald A. Quarles, Assistant Secretary of Defense for Research and Development.

President William Ahrendt'41, has appointed James K. Pickard'41, as Regatta Chairman and Robert K. Thulman'22, as Alternate Chairman to represent the M.I.T. Club in the Washington Rowing Association which each year sponsors the Sprint Regatta of the Eastern Association of Rowing Colleges. This year the Regatta will be held in May. — STERLING H. IVISON, JR.'41, *Secretary*, Bureau of Aeronautics, Navy Department, Washington, D.C. ANDREW F. HILLHOUSE'43, *Review Secretary*, Solar Aircraft Company, Cafritz Building, Washington, D.C.

CLASS NOTES

• 1886 •

Since the close of the 1953-54 season of *The Technology Review* the aged Secretary of the Class of '86 has slumbered in silence while recovering from his arduous labors of doing nothing about the 1954-55 season (now at hand). However, the clarion call of *The Review* editors in their October first reminder "to the secretaries of all classes" roused said secretary to attend to his secretarial duties — apparently the September reminder had not been sufficiently "clarionese" to produce the desired effect. His return to consciousness was induced by the receipt of two items from classmates. One was the notice of a change of address. Brother Wilson H. Low, formerly of Saratoga, Calif., has moved eastward, for he says that after September his address will be Omaha, Nebraska, where his son is living and where (quote) "I will probably stay permanently." Doesn't say just where in Omaha he will "stay permanently," but thinks it may be at the Blackstone Hotel. He will report when the matter is decided. He mentioned his approaching 90th birthday on November 15 next. (Got ahead of you, Wilson; my ninetieth was last June 7.) He added that he has sold his car and given up driving, and added that a year ago he gave up golf (he doesn't say he has sold his clubs). I had no golf clubs to dispose of as I was never a fan, and I transferred my automobile to my wife three years ago. She does practically all our driving nowadays. As Low will want something to take up his time perhaps he would take over my job as class secretary and treasurer. We need a younger man!

The other item was from Campbell, who writes worse drivel than I do — if possible. However, he sends his check for \$10.00 to help out the vanishing treasury. Good boy, Bill. No drivel, that! This suggests a report of the condition of the treasury at the present time. Balance April 30, 1953 — \$13.21. Received from Campbell and Mackintosh, \$10.00 each (good old scouts). Total: \$33.21. Expended for April, May, and October 1953 meetings, \$17.05; for January, April, and May 1954 meetings, \$14.50. Total: \$31.55. Balance October 1, 1954, \$1.66! This last gift from Campbell prevents a red balance after the October 25 meeting, which I plan to attend. Will other members of '86 take notice and come to the help of the secretary-treasurer? Come along, boys, and be numbered among the "good scouts" in the Secretary's next notes. — ARTHUR T. CHASE, *Secretary*, Island Creek, Mass.

• 1890 •

Our Assistant Secretary sent birthday greetings to Charles Sherman, who, on replying, commented on our problem of a satisfactory plan and location for '90's 65th anniversary. He wrote: "The idea of a special class reunion next June is attractive but I doubt very much if I

would feel equal to going to any evening gathering, and certainly not to one any more distant than one at M.I.T. Possibly if we had a luncheon meeting at the Graduate House I might be able to go." Let us have some more suggestions as to our 65th, and everyone plan to come. Though Charles is no longer president of the Belmont Savings Bank, the directors have made him vice-president and continue to have his advice. Greenlaw writes that his own damage from the September hurricane, at Newport, will run to about \$300. The Packards have a small cottage at Westport Point, Mass., about 15 miles east of Newport in an airline. They estimated about 1500 roses in bloom last June, Paul Scarlets on the west, Golden Glow on the south, and Van Fleet and white on the east side of the house. All are gone, but other damage was practically nil. From the Review Office we have William Flint's present address as P.O. Box 208, West Chester, Pa. — GEORGE A. PACKARD, *Secretary*, 25 Avon Street, Wakefield, Mass. FRANK M. GREENLAW, *Assistant Secretary*, 36 Bull Street, Newport, R.I.

• 1891 •

Our classmate, Channing Brown, should be rated as one of our most active members. He has been town clerk of Littleton for nearly 25 years and is still carrying on with full vigor. He was formerly the minister of the local church and has held many offices in the town. A recent clipping from the local paper was entitled "Littleton Town Clerk has forgotten more than many of us ever hope to know." It states that in his many duties in Littleton he served on the School Committee, was secretary of the library, and was town treasurer. In 1939 he was made minister, *emeritus*, of the First Congregational Church where he was formerly the active minister.

"When you ring the bell at 36 Foster Street a quiet, soft-spoken man will graciously usher you into his office. It is a veritable office for information for the Town. Reverend Brown has known five generations of several families in town and has performed around 300 marriages in the community. He can tell you about Littleton when it was a dairy community furnishing Boston with milk. Recently, however, with the advent of rapid transportation, Vermont and New Hampshire have taken over the milk industry and Littleton has turned to growing apples. Today the apple industry is growing fast and Littleton is becoming a town of residences. For information about Littleton just ring the bell at 36 Foster Street and you'll find the answer."

The photograph that accompanied the article was evidence that the answer would be given with his well-known thoroughness and graciousness.

Our very active classmate, Arthur Pierce, of Pittsfield, is again in the news. A clipping from the Berkshire *Eagle* states that the Pittsfield Chamber of Commerce honored him by the presentation of a certificate of merit for his 32 years' service in the Boy Scout movement. Dwight E. Jones told the 50 members present at the monthly breakfast that Pierce, who was born in Turkey of Ameri-

can parents, started work in Pittsfield for the old Stanley General Electric Company and spent countless hours of work with the Boy Scouts and was "still one of the country's most enthusiastic Scouters."

Our president, Harry Young, and Carl H. Bunker both attended the Alumni Day exercises in the spring.

The Alumni Office has notified us of the following deaths: Lewis A. Dunham, 32 W. 5 40th Street, New York, on April 14, 1954, and Francisco De Miranda Pinto, Borda do Mato 86, Rio de Janeiro, Brazil, on October 26, 1951.

The address of Ernest S. Tappan, who retired from Houghton Mifflin Company in July, is now 15 Walnut Street, Newtonville 60, Mass.

On October 18 I had a short talk with Frank Howard and learned that he had just returned from the hospital where he had been since July 23 following a collapse. It seems that he was doing a very light job in his workshop repairing a wooden box. He fell and was carried to the hospital. He said that his left side was useless, but that he had improved enough to warrant being taken home, where he is receiving excellent care from his family. He was cheerful and looked forward to being about again before very long. — GORHAM DANA, *Secretary*, 44 Edgehill Road, Brookline 46, Mass.

• 1893 •

We had an interesting letter from Minard Barbour in Harvard, Ill., recently. He tells us that he is about to celebrate his 83rd birthday. The State of Illinois has recently enacted a law requiring all over 70 years or older to take an examination when applying for an auto driver's license. It is a thorough one consisting of a written test on highway rules, signs, and so forth, an eye test and a driving test. Classmate Barbour's eyes were a little under requirements which necessitated a few visits to his oculist. They have given him a license which excludes all night driving. This is no hardship on him as he had done this voluntarily a few years ago. He writes that he and his wife are enjoying fairly good health and still hold their interests in what is going on in this old world of ours.

William Copeland writes us from his home in Sherborn that he retired several years ago from the field of water supplies and sewage disposal. Courtland Darrow writes that he keeps busy with cooking, gardening and playing cribbage. Classmate Darrow retired 11 years ago and shortly thereafter his wife, who for 40-odd years had efficiently performed the tasks pertaining to the running of their household, by reason of a fall down a flight of stairs, was permanently incapacitated for a large part of that work. During the months that Mrs. Darrow was in the hospital, Courtland made a diligent study of the culinary art of Fannie Farmer's Cookbook. By the time his wife returned home from the hospital he had made such wonderful progress that he was appointed family chef, which he still retains. They are living in the ancestral home and have a garden of fruits and flowers, which provide a never-ending satisfaction. Reading and games of cribbage provide the Darrows with much pleasure. We have a note from George Dearborn that he has been

living in Waverley since the death of his brother, Sam, Class of '84. Vaughan Dennett writes from Saco that he is living a quiet life as he is in his 88th year, but is able to draw up to the table three times a day, "between times easing myself into a comfortable chair where I read or listen to the chatter of one or another of my many friends."

Edmund Leeds is still active in the design of schools and commercial buildings. One of his firm's recently completed schools is located in Malden. It is an elementary school consisting of 20 classrooms, two kindergartens, an auditorium seating 420 and a combined gymnasium-cafeteria. They also have a junior high school under construction in Brockton, which consists of approximately 35 rooms, gym, auditorium, shops, home management and various other rooms.

John Codman writes that he resigned as treasurer of the Fabreka Products Company in December, 1953, a position he had held for 34 years. He read *Progress and Poverty* by Henry George back in 1912, and has continually since then endeavored, with voice and pen, to promote his ideas. We had a letter from Charles Garlich in which he tells us that he had a heart attack a few years ago and since then has not been allowed to use the stairs, and is taking care of himself. He is able to attend the meetings of the Board of Directors of the Caledonian Hospital in Brooklyn, of which he has been secretary for 44 years, being the only living founder of the hospital.

We regret to record the death of Jesse B. Baxter at his home in Milton, Mass., on October 12. He retired two years ago after 48 years in the banking business. He leaves his wife, Katherine, and two daughters, Mrs. Donald Munson of Dedham and Mrs. John Foley of Kensington, Md. — GERTRUDE B. CURRIE, *Secretary*, Fay, Spofford and Thorndike, 11 Beacon Street, Boston 9, Mass.

• 1894 •

The Secretary and his spouse made a brief trip to Los Angeles at the end of June to attend the national convention of the Institute of Food Technologists, and especially to be present at the induction of our former student, Philip K. Bates '24 as president of this important and flourishing organization. While the Secretary had originally planned to extend his trip to the Bay area to see Jack Nowell and Austin Sperry it was found necessary to postpone this pleasure to another time. The transit was made by non-stop flight in both directions, and was most enjoyable. To have breakfast in our own apartment in Cambridge and dinner with the Bates family in Santa Monica, and see three thousand miles of our country in the meantime, made a day long to be remembered.

The Boston Sunday *Herald* of October 17 carried a picture of interest, showing Governor Herter in the act of presenting a painting of the Old State House to Arthur A. Shurcliff in recognition of his splendid services as secretary of the Massachusetts Art Commission, from which he has just retired. Shurcliff has long been famous in numerous parts of the metropolitan district, of which one example is the treatment of the southern shore of the

Charles River Basin after the construction of the Storrow highway. His classmates will be most happy to learn of this official recognition of his professional and public service.

Arthur J. Farnsworth after long residence in the rapidly growing area in the hills back of San Diego, has reported a new address at 484 Prospect Terrace, Pasadena 3, Calif. Graduating in electrical engineering, and then taking up patent law, he has had a long career, and retired several years ago. Pasadena should be a most satisfactory place to live in, if the Secretary's observations on several visits are reasonably reliable. Jim Kimberly has made his annual fall trek to his winter home at Tryon, N.C., after spending his summer at his old stamping ground in Neenah, Wisconsin, where he has had large business affiliations for many years.

With sorrow we have to report one more loss in the ranks of the Class. Frederick Southgate Bigelow died in September at his home, Haverford Hall, Villanova, Pa. Bigelow was born in Boston, October 23, 1871, the son of Dr. George Frederick and Rebecca (Houghton) Bigelow. He attended the Boston Latin School and entered M.I.T. in September, 1890. Here he remained three years as a student in electrical engineering, but did not return for the senior year. He was always interested in writing and editorial work, and this became his profession. He was employed by the *Saturday Evening Post*, and in 1899 became associate editor of that well known periodical, and held this position for 30 years, and was for several years more a contributing editor, and also contributor to numerous other magazines, including *The Ladies Home Journal*, *The Cosmopolitan*, *Esquire*, and others. He was the editor and compiler of several textbooks as well. Bigelow was broad in his interests. For several years he was a member of the Board of Managers of the Hospitals of the Graduate School of Medicine of the University of Pennsylvania, and of the advisory council of the American Eugenics Society. He was a member of Franklin Inn and Philobiblon Clubs of Philadelphia, and of the Century Club in New York. In 1915, he married Mary Lowell, daughter of Charles Lowell of Boston, and they had three children, Charles Lowell, Gertrude Ogden, and George Frederick Bigelow. After his retirement he lived in Philadelphia for a time, then in Haverford and in recent years in Villanova. Although he was never active in class affairs or interests, he is remembered as a friendly and courteous gentleman, and the warm sympathy of the class survivors is extended to his family. — SAMUEL C. PRESCOTT, Secretary, Room 16-317, M.I.T. Cambridge, Mass.

• 1895 •

We report regretfully the passing of three more classmates, Arthur F. Nesbit, Course VI, on June 6, 1954; Charles Prentice Cooke, on September 2, 1954; and Rudolf F. Haffenreffer, Jr., Course V, on October 8, 1954. Arthur Nesbit was born in Pennsylvania and lived in Wilkesburg, Pa., the greatest part of his life. He graduated from Lafayette College, Easton, Pa., with degrees of A.B. and A.M. and then came to Tech in 1892 and

graduated with our Class. After graduation he was in charge of Departments of Electrical Engineering and Physics at New Hampshire State College at Durham. In 1912 he transferred to the University of Pittsburgh as professor of Electrical Engineering and R. B. Mellon Research Fellow in Electrical Precipitation. He researched in the cleaning of blast furnace gases for the Carnegie Steel Company, and was Consulting Engineer for the Universal Portland Cement Company. He designed an electrical smoke precipitator for the Pennsylvania Railroad; also a special fume arrestor for use with war gas masks; and a check current transformer for steady currents at 50,000 and higher voltages. He had an interesting and progressive family of seven children. His age was 84.

During our years at Tech we had enrolled three lads with the name of Cooke. They were all born in New Hampshire and were related and named: Charles Prentice Cooke, John Williamson Cooke, and John Winfield Cooke. John Williamson resided in the East while the other two went West to Los Angeles, Calif., where Charles Prentice Cooke passed on last September. Charles Prentice Cooke, Course VI, started with the City Engineers Office, Los Angeles, as a field engineer and for many years continued in this capacity.

Rudolf F. Haffenreffer, Jr., Course V, will be gratefully remembered by many a Tech man for his graciousness in contributing a pleasant incentive to the festivities of the Stein-On-The-Table Banquet. He was born in Boston, a true Yankee, lived in Fall River, Mass., and finally had permanent residence in Providence, R.I. He was educated at Chauncy Hall, Boston, and followed with his connection at Tech with our Class during 1894-1895. He also attended the Rauscher Institute Polytechnicum, Stuttgart, Germany. While he was chairman of the board of the Narragansett Brewing Company, he also was president of the Mount Hope Bridge Company and the Hereshoff Manufacturing Company. Other business connections were: president of the Automatic Telephone Company; Utah-Apex Mining Company; and the Montezuma-Apex Mining Company. He had a number of hobbies among which were farming and the raising of purebred Guernsey cattle and horses. Thru his love for Indian lore he collected a most remarkable and valued assembling of wooden Indians, which at some time or other graced or decorated the fronts of cigar stores and business establishments. He was a member of many clubs including the Fall River Yacht Club. He owned the historic Mount Hope Farms in Bristol, and many were his well considered philanthropies. He will be missed at the Tech banquets.

Alfred V. Lincoln, Course I, still resides in Charlestown, Mass., but at 16A Cordis Street. Everell S. Sweet, Course V, has moved to 1116 Washington Street, So. Braintree, Mass. Tommy Lothrop who has been living in Glencoe, Ill., for many years contemplates moving East, since his retirement, to get closer to his family who reside in Washington, D.C. When he tells us his address you will be advised. — LUTHER K. YODER, Secretary, 69 Pleasant Street, Ayer, Mass.

• 1896 •

Holiday Greetings and best wishes for the coming year! Even at the expense of annoying a few who face the future undaunted and unafraid, we are forced to admit and act our age if we are to reap the rewards and comforts of the sunset hours. Most of us have participated in and benefited from very active lives. Accepting a chair in the reviewing stand should not indicate that we are finished in our progressive efforts, but should be accepted as a mark of distinction with the fitting implication that others shall now carry on. Our hours of reflection should be rich in memories and aid us in the councils which remain as valuable facets for those who carry the torch forward. (With apologies, "Don't shoot the organist, he's doing the best he can.") We received a telephone call from our classmate Gibson. Those of you who attended our Swampscott reunion will remember his place at Nahant. His rose garden this year was unusually beautiful. The *Sunday Post* magazine for August pictured this in color on the front page. He was quite ill this summer. We have received a notice (in gold type) from Mr. and Mrs. Joseph Harrington, announcing their 50th wedding anniversary. This was answered by your Secretaries. We have a change of address for Lieutenant Colonel Henry H. Sheridan, to 2419 Overlook Road, Cleveland Heights 6, Ohio. The following notes of interest regarding Paul W. Litchfield will be of much interest to you all. We quote from the *Cleveland Plain Dealer*, in an article by Charles M. Conaway; "Akron, Ohio. July 25 — Paul Weeks Litchfield will be 79 tomorrow, and the dean of all of Akron's active industrialists plans to put in another full day at his desk. At The Anchorage, the Litchfield home on Merriman Road, he said that he 'would spend the day as usual working in my office' . . .

"It was on July 15, 1900, that the 24-year-old ex-boss of a bicycle tire factory down East moved into the office in East Akron with 'superintendent' lettered on the door. Litchfield was four years out of M.I.T. where he had graduated in chemical engineering. There is no record of it here but the young executive probably decided he had arrived when he assumed the \$2,500-a-year post with Goodyear. His first engineering job had paid him \$9 a week. Goodyear had been in business only two years when Litchfield threw in his lot with the young concern. He stepped up to the post of factory manager in 1911. Four years later he was made vice-president. In 1926 he stepped up to president of the world's largest concern making pneumatic tires, holding the combined titles of president and chairman of the board from 1930 to 1940. In a career devoted to production and sales of everything from aircraft to zeppelins, Litchfield has found time to pick up decorations from foreign governments, honorary degrees, and an abiding enthusiasm for the Boy Scout movement. He is chairman of the Board and president of Goodyear Aircraft Corporation and of the company's world-wide chain of subsidiaries." Also the October issue of *Coronet* magazine gives a most interesting picture of another side of his life. A letter on September 29 from Charles Trout tells

us he will retire as of October 1, 1954. He says, "My health is too good to retire and my age too much to do anything else." His new address is 93 Waters Avenue, Staten Island 14, N.Y. He sends the follow-letter written him in May, 1952, which he just came across in his files from another Alumnus. "Most Eminent Fellow Alumnus: The last time that I can remember having seen you was when you were presiding as president of the Society of Civil Engineers of M.I.T. in the Rogers Building about 57 years ago. Doubtless you wonder what produced this eruption. It arises, in part, from the fact that your department, within the past year or so, has employed the son of J. Christopher Cullion, a much valued friend of the undersigned. If, by any chance, fate (either kind or unkind to you) should bring you into the City of Providence, I would like an opportunity to pay for your lunch. Cordially yours /s/ Henry W. Ballou'97." This following letter is from the daughter of our late classmate (Helen Chamberlain Dodd). "Dear Dr. Rockwell: Thanks so much for your kind note. I was remiss in not getting in touch with you but there was so much to attend to that some things were left undone. Mother was a most unusual person, and I am already missing that tremendous fund of information on which we all drew. I absorbed as much as I could, but in going through her papers and photographs, I realize how much I never knew. There is a line of M.I.T. mugs on her china shelf, and I shall send one to each of my brothers and keep the rest myself. She did enjoy those gatherings so much. I've heard often of you and the others and of all the gay times she had at college. We appreciated hearing from you and hope you will remember her to the Class when you next meet. Sincerely, Nancy Dodd Waldmann, September 24, 1954." — JOHN A. ROCKWELL, *Secretary*, 24 Garden Street, Cambridge, Mass. FREDERICK W. DAMON, *Assistant Secretary*, Commander Hotel, Cambridge, Mass.

• 1897 •

Supplementing the brief notice in the November issue, more complete data regarding our late Secretary John A. Collins, Jr., has been received from his son, John Oliver Collins'27. The following notice appeared in the Lawrence paper of August 16, 1954: "John A. Collins, Jr., 20 Quincy Street, Methuen, retired assistant plant engineer at the Arlington Mills division of the William Whitman Company, died Saturday at Overlook Hospital, Summit, N.J., following a five months' illness. Born in Newport, R.I., November 8, 1874, Mr. Collins attended M.I.T., receiving his B.S. degree in 1897, and his M.S. degree the following year. After serving a brief period with the old Atlantic Mills here, he began his service with the Arlington Mills May, 1899, and was assistant in the master mechanic's office at first, becoming assistant superintendent in 1909. In 1928 his title was changed to assistant plant engineer, a position he held at the time of his retirement May 1, 1949, the date he completed 50 years' service with the company.

"Mr. Collins was treasurer of the Arlington Mills Agents General Committee from the time of its inception in 1919,

an organization which sponsored concerts by the Arlington Mills Band, handled distribution of relief funds, also the Employee Service Fund organized during World War II. One of his hobbies was mountain climbing and he scaled most of the accessible peaks of the White Mountains. He was a member of the Massachusetts Audubon Society and had several feeding stations at his home that attracted many unusual birds during the winter months. He was a member of the Church of the Good Shepherd (Universalist) and a 32nd Degree Mason. Surviving are a son, John Oliver Collins, of Westfield, N.J., and a grandson, John O. Collins, Jr., of Somerville, N. J. Private services were held today and burial was in Newton Cemetery."

His son writes, "Near the end, his mind continually returned to the mill where he had spent 50 years. His loyalty and interest in the mill was unbounded and it was a sad day for him when in later years, after he retired, that the Arlington Mills closed down. After his wife died in 1950, he insisted on continuing to live alone in the house in Lawrence because he felt nearer to her there. It was not until April of this year when he had his first heart attack that he would consent to come with us."

We are saddened to learn also of the death of Ethan H. Howard of Youngstown, N. Y. The following information is quoted from a news clipping: "Ethan H. Howard, 80, died at Memorial Hospital where he had been confined for a month. Born September 20, 1874, the son of the late Henry Cogswell Howard, former president of the old Bank of Niagara, and Carolyn Jewett Howard, the family formerly lived on River Road in the Village of LaSalle in the summer and in Buffalo during the winters. He was the brother of the late George J. Howard, also a former president of the Bank of Niagara and chairman of the Board of the Power City Trust Company. Educated in Wheeler's School, Buffalo, Mr. Howard was a graduate of M.I.T. He made his home in Youngstown, N. Y., from 1910 and was a fruit grower.

"He was a member and warden of St. John's Episcopal Church, Youngstown, a member of Delta Upsilon Fraternity, a former member of the Niagara Club, Niagara Falls Country Club and University Club of Buffalo. He is survived by his wife, Flora Johnson Howard; a son, Edwin L.; a sister, Mrs. Burton J. Mitchell; three grandchildren and two great grandchildren. Funeral services were held at St. John's Church. . . ."

I am pleased to announce that George Wadleigh has agreed to act as Class Agent for the Alumni Fund, succeeding the late Harry Worcester. Change of address: Louis J. Richards, XI, 1077 East Jersey Street, Elizabeth, N.J.

Those of you who have read the new book by Samuel C. Prescott'94, Professor of Industrial Biology, *Emeritus*, and the Institute's first Dean of Science, entitled, *When M.I.T. was Boston Tech*, I am sure enjoyed as much as I did this interesting volume. It covers in detail the persistent efforts required to secure a charter for M.I.T. and an outline of the family and early history of William Barton Rogers.

It furthermore contains a detailed history of the Institute until 1916 when it moved to the present location in Cambridge. Since it covers our undergraduate period, I am sure you will find the book of great interest. It may be obtained from the Technology Press.

It was my sad duty to send flowers in the name of the Class to the funeral of Ernest F. Learned and a note of sympathy was sent to the family. The following has been received from Mrs. Learned, 147 Church Street, Watertown 72, Mass.:

"Ernest F. Learned, B.S. in Electrical Engineering, M.I.T., 1897, passed from this world on May 30, 1954, at Braintree, Mass. He was born in Watertown, Mass., in 1874, his father, Wilbur Learned, having served for many years as town engineer for that municipality. After a number of months with the Metropolitan Water Commission in connection with the construction of the Chestnut Hill and Spot Pond pumping stations in the Greater Boston area, Ernest joined the engineering department of Stone and Webster at their Boston headquarters, remaining with that firm about 10 years. He was engaged in the construction of the then Blue Hill Street Railway, and then entered the hydroelectric and power transmission field, working for S. & W. on the Taylors Falls, Minn., and Columbus, Ga., projects. Upon leaving Stone and Webster, Ernest became office manager of the Bradlee and Chatman Company, Boston, (C. W. Bradlee'97) an industrial heating concern, where he remained about three years. He then entered the field of material handling, being associated with the late Day Baker, manufacturers' representative at Boston, and ultimately was representative in New England for the C. W. Hunt Company, Yale and Towne Manufacturing Company, Cambridge (Md.), Wire Cloth Company, and the Prater Company of Chicago. He was a highly trained sales engineer of the utmost integrity and won the confidence of many industrial and consulting engineers in the area which he covered. In 1917 he was married to Bessie Smith of Watertown, Mass., and resided at Belmont, Mass., and Weymouth Heights, Mass., for the rest of his life. Mrs. Learned survives him. He was a member of the Congregational Church, a staunch Republican and an American citizen of supreme loyalty."

A few answers to my circular letter of September 27 have come in to date. I quote two of them below and as other letters come in they will appear in later issues.

Irene Du Pont writes from Wilmington: "You have asked me to write a thumbnail sketch of my accomplishments in life and though I have not become famous, it is because I have not had a Boswell. First: I am a top notch conservative. (a) I still demand the now old fashioned gear change in my car, (b) I haven't a deep freeze, (c) I haven't a television, and (d) I haven't even gotten a divorce, after living for 54 years with the same wife. Second: (a) I am unusually ultra precocious, (b) I attended the Philadelphia Centennial Exposition of '76 six months before birth, (c) I was involved in a breach of the Sherman Antitrust law beginning six years before my birth and

twenty years before the law was passed, and (d) now you have convinced me that I was the youngest man in the Class of '97. Third: As a golf player I am unique. (a) you will recall that I won the championship of '97 at the 40th Reunion, without handicap and with a score of 97 (probably because John Barleycorn influenced my competitors). Fourth: Productivity record is not too unusual. Irene and I have had 10 children. As a result, we have now 34 grandchildren and two great-grandchildren to say nothing of a daughter-in-law, seven stalwart sons-in-law and five grandchildren-in-law. Isn't that enough?"

No, it is by no means enough, and he should by all means acquire a Boswell, and a record of his distinguished business and personal career would be of much interest to us all and of value to posterity. With his usual modesty he doesn't mention that at the present time he is serving as chairman of the Board of the Du Pont Company, having succeeded his older brother, the late Pierre. I wonder whether anyone in '97 will care to compare his record of productivity with that of Irene?

George Wadleigh writes from Hastings-on-Hudson: "So many of us are wholly or in part on the shelf that accounts of present activities must be pretty limited. Tom Weymouth keeps up his activities in high pressure gas lines and in spite of the loss of his wife three months ago is going back to 930 Park Avenue for the winter. Proctor Dougherty keeps close to Washington activities. Allen Crocker keeps up his heating and ventilation work at Rochester, N.Y. His address is 311 Alexander Street. I mean to drive over to New Rochelle before long and see Shepard. I expect to go to Philadelphia next month to a T.A.P.O.I. Convention (what alphabetical agency is that?) where in the past I was a committee chairman for some years. As to the last paragraph in your circular letter, the answer as far as I am concerned is to keep busy on matters that interest one and for my part I like still to see wheels go around and read history." — JOHN P. ILSLEY, *Acting Secretary*, 26 Columbine Road, Milton 87, Mass.

• 1998 •

Now to live up to our promise, last month, of a double portion of '98 news. Attendance at the 56th Reunion last June was less than at the 55th, the year before; and very much less than on the occasion of the Golden Anniversary. No special effort was made in behalf of the 56th, as most of the boosters of previous Reunions were away on special trips, either just prior to or during the Reunion season. Thus, our perennial Chairman of Reunions, Lester D. Gardner, was in the West; George Cottle was in Europe; Dan Edgerly had just returned from a Mediterranean trip; and your Secretary, from a trip through the South and the West. Nevertheless, a representation from the Class showed up on Alumni Day, June 14, 1954. There were present at the Alumni luncheon in Du Pont Court, Agnes and Elliot Barker, Jean Blanchard, Marion and Edward Chapin, Fred Dawes, Dave Fenner, Marion and Ernest Russ and Paul Wesson. Paul Wesson from Rochester, N.Y., was long-distance man;

Dave Fenner from Falmouth, Mass., and Fred Dawes from Hudson, Mass., were runners-up. We sat at tables reserved for the older Alumni, near the head table; and a good time was enjoyed by all. At the Alumni Banquet in the evening at Hotel Statler the following were present: Elliot Barker, Fred Dawes, George Harrison, and Paul Wesson. We understand from Elliot that this also was a very enjoyable and instructive gathering.

The Secretary represented the Class at the memorial services conducted on June 25 in the Great Court to honor Dr. Compton. This service has been described on page 453 of the July issue of *The Technology Review*, and was indeed beautiful and impressive. It will be noted that earlier in the morning a private service was held in the Chapel of Mount Vernon Church. The Secretary was moderator of Mount Vernon Church when this Chapel was built, and well remembers when, after its completion, he showed it to Dr. Compton, who approved of it highly. Another personal reminiscence. Turn over the page of your July Review (from page 453 to page 454) and you will see a picture of Dr. Compton accepting the gift of the 25-year Class at the Alumni Banquet on June 14, 1954. This reminds me of the '98 Golden Anniversary, and in particular the moment when it was our privilege in the name of the Class of '98 to present a 50-year gift to Dr. Compton and the Institute. We will never forget that gracious, kindly face.

Lester has been very busy the past few months, going from honor to honor. He was honored at the May 24 Annual Meeting of the Alumni Council, when President Killian presented to him a letter announcing that the Institute proposed to set up out of the unrestricted funds of M.I.T. a scholarship fund in the amount of \$50,000 to be known as The Lester Durand Gardner Scholarship Fund. This honor was described in the July issue of *The Review*, page 479; and by Dan Edgerly in Presidential Class Letter No. 14, July, 1954. After being honored at Boston, Lester started West to California for fresh honors. He attended a meeting at Los Angeles of the Institute of Aeronautical Sciences, of which he was founder; also a House Warming of the National Advisory Committee for Aeronautics, at the High-Speed Flight Station, Edwards, Calif. Dan has sent us a program of this latter meeting, and we note two titles which concerned our classmate — Introduction of Distinguished Guests and Remarks . . . Dr. Lester D. Gardner (four speakers in all). Lester's remarks were featured and quoted at length in a special article in the June 30 issue of the *San Diego Union*. Heading the article was a composite picture of a genial, smiling Lester and of a friend, with the caption underneath, "Dr. Lester D. Gardner, left, of New York, founder of the Institute of Aeronautical Sciences. . . . With him is Dr. John F. Victory, right, executive secretary of the National Advisory Committee for Aeronautics — *San Diego Union* Staff Photo." Following these activities Lester enjoyed a pleasant vacation in and around La Jolla, Calif., residing at the attractive and commodious La Jolla Beach and Tennis Club. He wrote us, and we

quote in part: "Have left this delightful Club where I centered for three weeks with side trips . . . to L.A. and Mexico. The Bodwells and the Curtis family gave dinner parties and many other friends of Maud (Mrs. John D. [e] Loss) Underwood) gave me a wonderful time. All send you best regards." Leaving La Jolla, Lester stopped at the Lovelace Clinic, Albuquerque, N.M., for a check up. He sent us a small pamphlet describing the Lovelace Foundation for Medical Education and Research, with the following notation on the front cover: "Regards from an 'inmate' who admires great skill, wide coverage and complete equipment." This booklet makes excellent reading and we especially noted on pages 11–12 the following, from which we quote in part, "Radiation Therapy Center. . . . A new form of radiation therapy apparatus, which has demonstrated promise in the treatment of carefully selected deep seated malignancies is the Cobalt 60 Beam Therapy Unit. . . . It produces gamma radiation equivalent to a 3,000,000 volt X-ray machine . . . the patient is . . . placed in a . . . reclining position, while the radio-active source moves. Continuous rotation of the source about the patient through 360 degrees is possible. . . . This combination of super-voltage radiation and precise rotational therapy provides a much better physical distribution of radiation for the treatment of deep seated malignant neoplasms (tumors) than conventional deep X-ray therapy." In passing, we are glad to report that Lester received a clean bill of health.

Presidential twin, Daniel W. Edgerly, is becoming a world traveler. Early in 1952, he crossed the Pacific on a trip to the Orient. Classmates will remember his interesting comments on the Hawaiian and Philippine Islands, Hong Kong and Japan, as given in the Class Notes. This year he crossed the Atlantic for a cruise in the Mediterranean, as outlined in the Class Notes of June '54. Then followed Class Letter No. 13, describing in further detail his delightful visit in Athens with Gorham P. Stevens, with an appended write-up entitled *The Athenian Agora*. You and Gorham, Dan, will soon make us all archaeologists, or perhaps better, archaeologically-minded. In the June notes, Elliot called our attention to the fact that in the course of the trip, there were "23 ports of call."

Perhaps, Dan, we can persuade you to send us another letter describing further striking features of this trip.

Our original world-traveling classmate, George Cottle, last summer flew from East Boston via London to Vienna, and then in the next seven weeks toured seven countries. He and companions traveled by plane and private car; and sightseeing and photography centered about the following places: Vienna, Salzburg, Innsbruck, Munich, Baden-Baden, Heidelberg, Frankfurt A/m Main, Copenhagen, Goteberg, Karlstad, Granna, Malmo, London, Glasgow, Oban, Pitlochry, Trossachs, Stirling, Edinburgh, London and Paris. Now, get out the old Atlas! George has innumerable wonderful pictures and has generously offered to show them to a '98 Get-Together at the Algonquin Club.

In the June, '54 notes, Elliot mentioned that the Secretary was also doing some traveling. The travel bug is catching! We (my sister and I and a friend) drove in the course of three months, 12,000 miles; through 25 states and the District of Columbia. The friend did all the driving. Not an accident, not even a puncture, which speaks volumes for the driving ability of our friend and his wonderful care of the car. Now put away the Atlas and secure a large map of the entire United States from your local A.A.A.; and then off we go, with many of you who have been there before, substantially as follows: Boston, Williamsburg, Wright Brothers Memorial (Kill Devil Hills), Roanoke (Lost Colony), Charleston, Savannah, St. Augustine, Marineland, Indian River, Palm Beach, Fort Lauderdale, Miami Beach, Miami, Tamiami Trail, Fort Myers, Sarasota, Lake Wales, Mountain Park, Bok Tower, Orlando, Winter Park, Suwannee River, Tallahassee, Wakulla Springs, Mobile, Bellengrath Gardens, Biloxi, New Orleans (just before Mardi Gras — saw two remarkable processions), Baton Rouge, Natchez, Dallas, Austin and San Antonio. At San Antonio the party divided, the sister flying to Mexico City for a five-day trip, whilst the boys trekked by car across the wide spaces of Texas and through New Mexico, visiting en route the Carlsbad Caverns, the White Sands National Monument and the Saguaro Forest at Tucson, picking up sister at the Phoenix Airport, she having covered by airplane in hours the distance traversed with the car in days; thence on to Yuma, Imperial Valley, San Diego, La Jolla, Palomar Mountain (200-inch telescope), Los Angeles, Pasadena, Santa Barbara, Monterey, Carmel, San Francisco, Yosemite Valley, San Joaquin Valley, Death Valley, Scotty's Castle, Las Vegas, Hoover Dam, Flagstaff, Oak Creek Canyon, Petrified Forest, Painted Desert, Gallup, Albuquerque, Santa Fe, Taos, Raton Pass and return, Amarillo, Claremont (Will Rogers' Memorial), Ozarks, Nashville (where our friend visited a new granddaughter), Knoxville, Gatlinburg, Great Smokies, New Found Gap, Asheville, Biltmore (Vanderbilt Castle), Tryon, Blue Ridge Highway, Richmond, Monticello, Mount Vernon, Washington and home. We endeavored to call on as many classmates as possible. The warm and kindly receptions, and where time permitted entertaining, added greatly to the delight of the trip. We were able to visit Mr. and Mrs. Albert W. Tucker and daughter, Daytona Beach, Fla.; Jean and Arthur Blanchard, Lake Wales, Fla.; Grace and Roger Babson, Mountain Park, Fla.; Colonel and Mrs. Harold W. Jones, Orlando, Fla.; Henrietta and Howard Bodwell and Maud (Mrs. John D. Underwood), La Jolla, Calif. (we remember that delightful La Jolla Beach and Tennis Club where Lester sojourned); Everett Curtis and Will Stevens, San Diego; Homer Sargent, Pasadena; and Mrs. Helen Blanchard Cole and daughter (Prof. and Mrs. Blanchard's daughter and granddaughter), San Marino. We passed up Sequoia National Park, Zion National Park, Bryce Canyon, and the Grand Canyon because of snow and impassable roads, closed by authorities.

Dan and Gorham will make us all archaeologists. Now along comes Fred Jones, who will make us genealogists. He has prepared and kindly sent us a small booklet entitled, "A Genealogy of the Mills Families of Needham with Chart of the Fuller Families with Historical Data, 1619-1953." Fred's mother belonged to the Mills family. Needham, for those at a distance and who may have forgotten, is Needham, Mass., a suburb of Boston. This is a mammoth work: 74 pages in all, with 25 pages of genealogical tables, all in beautiful hand printed script, with a two-page map of Needham and numerous pictures of former members of the Mills family and their residences. The crowning picture of all is The Old Manse, built 1720, with Fred standing in the foreground. Those interested in the field covered should write to Fred, who will gladly furnish further information.

On reaching home the other day from attending the Textile Chemists' Convention at Atlanta, Georgia, we found awaiting us a book entitled *When M.I.T. was "Boston Tech" 1861-1916*, by Samuel C. Prescott. This book is just fascinating reading, especially to the older classes who remember Rogers Steps, Walker, Engineering Building and the earlier presidents — in our case from "Johnny" Runkle to Arthur A. Noyes. How many of the readers remember Professor Runkle and his classes in differential and integral calculus; and Professor Noyes and the organic chemistry exams? If you don't recall these professors because you were not in Course V there is plenty in the book about other famous teachers, as "Getty" Lanza, "Charlie" Cross, and so forth, that will give you many a nostalgic thrill. By a magnificent and generous gesture, the author, Samuel C. Prescott of the Class of '94, has turned over all royalties to the Alumni Fund.

Paul Wesson is an art critic. Glancing through the Art Section of a recent issue of the *Christian Science Monitor*, we noted a picture of a man plowing and under the caption, "Primitives and the Plow," our eyes caught the name of Paul Wesson. From the write-up we quote in part as follows, "A mighty blow on behalf of American primitive painters has been struck this week by Paul B. Wesson of Rochester, New York. He has raised at the same time an interesting point in farm history . . . we reproduce the relevant detail from the . . . picture, so that readers may fully appreciate the following letter from Mr. Wesson." Then follows a three-paragraph letter critique from Paul concerning the use of the plow and the primitive painting in question.

We regret to advise that two more classmates have passed within the Unseen Temple: Huntley W. Davis of Montreal, P.Q., Canada, and Granville Smith of Baltimore, Maryland. Concerning Huntley Davis we have only the routine notice from the Alumni Office. We have several clippings concerning Granville Smith, thanks to the courtesy of Ray Faight, Dan Edgerly and the Alumni Office. A composite of notices in the July 23 editions of the *Baltimore Sun* and the *Evening Star* and the *Post and Times Herald* of Washington, D.C., follows:

Granville Smith, 78, retired naval architect — "Granville Smith of Baltimore, formerly of Washington, died yesterday at Union Memorial Hospital in Baltimore. He served with the Army Engineers for more than 20 years. He was born in St. Louis, Mo., and came to Washington in 1880 and lived there until the 1920's, when he moved to Baltimore. He studied at the Georgetown Preparatory School and the Massachusetts Institute of Technology, graduating from the latter in 1898. Mr. Smith was awarded a citation from Secretary of War, Henry L. Stimson, for developing a special type of dredge during World War II. He retired from the Army Engineers in 1948. He was a member of the Society of American Military Engineers. He was a brother of the late Dwight Gordon Smith and the late Isabella Stuart, both of Washington. Survivors include two nieces, Miss Catherine Hurst of Baltimore and Mrs. Isabella Stuart Kelly of Westchester Apartments, Washington."

Ray Faight adds a human touch in his letter about Granville. He writes, "I knew Smith but slightly at Tech. My outstanding recollection is meeting him coming down the stairs of Walker so mad that he was crying, and saying that Charles Bernard had flunked him in French." Well, apparently, Granville surmounted this minor rebuff from the celebrated Charles Henry Leon Napoleon Bernard (as did others), and although he did not graduate, obtained eminence in his profession.

We will conclude these notes for the December issue of *The Review* by wishing all the boys and girls of '98, in the name of the Secretary and the Assistant Secretary, a Merry Christmas and a very Happy New Year. We hope you will all shed your modesty and keep the Class informed of what you have done and what you are doing. — EDWARD S. CHAPIN, *Secretary*, 463 Commercial Street, Boston 13, Mass. ELLIOT R. BARKER, *Assistant Secretary*, 20 Lombard Road, Arlington, Mass.

• 1899 •

The *Boston Herald* for Sept. 28 recorded the death of Mrs. Alice L. Fernald of 145 Adams Street, Milton, at the Baker Memorial Hospital, Boston, on the 27th. She was the widow of Dr. Guy C. Fernald, who was psychiatrist for 27 years at the Concord Reformatory. Mrs. Fernald was 86 years old at the time of her death. Through the Alumni Secretary's office comes notice of the passing of Everett E. Goodell of Westboro, Mass. Just before our 55th Reunion a letter was received from his home that Everett had suffered a cerebral hemorrhage.

Changes of address: Frank E. Hermann's address is now 119 Midland Avenue, Bronxville 8, N.Y. Edward A. Packard is now located at 1413 54th Street South, Gulfport, Fla. His former address was Yonkers, N.Y. Walter H. Suttiff is still with the Bolton-Pratt Company of Cleveland, Ohio, but the room number has been changed from 420 to 703. — BURT R. RICKARDS, *Secretary*, 381 State Street, Albany, N.Y. MILES S. RICHMOND, *Assistant Secretary*, 1793 Beacon Street, Brookline 16, Mass.

Henry Brock sets an example which we wish others of the Class would follow, by sending us the following short biography: "I was born in Boston and received my education at Boston College, M.I.T., St. Andrew-on-Hudson, Woodstock College, Md., and Ore Seminary at Hastings, England, receiving the degrees, A.B., B.S., M.A., Ph.D. I entered the Society of Jesus in 1900 and was ordained priest at Hastings in 1912. My main work during the years has been in the field of education, one of the many activities of our Society, both at home and in mission fields. Physics has been my principal interest, and it has been a rare experience to follow the growth of this science since our days at M.I.T. I was at Holy Cross College, Worcester, 1905 to 1909, and during the year 1913-14 I was a member of the first faculty at Boston College after its transfer from the South End of Boston to Chestnut Hill. For many years it has been my pleasant and inspiring task to teach the young members of our Society, first at Woodstock College, Md., 1915-1924, and then at Weston College, Weston, Mass., 1924-1939 and again after 1943. Besides teaching I have also had church work, having been in charge of the Catholic Church in Alberton, Md., for eight years, while I was at Woodstock College, pastor of Holy Trinity Church in Boston for two years, Catholic Chaplain at the Industrial School at Shirley, Mass., and Chaplain at the Home for Catholic Children in Boston. I was Rector of St. Robert's Hall in Pomfret, Conn., for two years, 1939-1941.

"I am a Fellow of the A.A.A.S., American Physical Society, American Association of Physics Teachers, American Meteorological Society, American Association of Jesuit Scientists of which I was president in 1936. I have contributed to the Catholic Encyclopedia, Grolier Book of Popular Science, American Catholic Quarterly, and the Jesuit Science Bulletin of which I was editor, 1923-1928. I am now in semi-retirement, still doing some teaching, but very little. I have no special hobbies except reading in the fields of science and literature and an interest in the activities of our students."

The successes of the children of our classmates interest us as much as those of their fathers. The following is from the Boston Herald. "Thomas Doane Perry, Jr., yesterday (September 15, 1954) became business manager of the Boston Symphony Orchestra, stepping into the biggest business task in the American orchestral world. Former assistant to George E. Judd, for 40 years Symphony manager, Perry will handle the 1½ million dollar annual budget of the 104-member orchestra and the business arrangements for its tours and concerts, the most extensive of any big American orchestra. Also within the scope of his worries are the forthcoming Saturday night N.B.C. coast-to-coast broadcasts replacing the N.B.C. symphony orchestra formerly led by Arturo Toscanini. A pipe-smoking young man whose hobby is tinkering with vintage automobiles, Perry was associated with concert management at the Curtis Institute in Philadelphia before

coming to Boston as New England Mutual Hall manager. His wife is an amateur sculptress and they have two sons. Perry was born in Grand Rapids, Mich., and is a Yale graduate."

Nathaniel D. Rand sends us the following. "In 1901 I went with the Carborundum Company, and then with the New England Telephone and Telegraph as assistant to the electrical engineer. Then I went with the War Department as an electrical engineer, stationed at Fort Snelling, Minn. In 1904 I was engaged by Pass and Seymour (electrical manufacturers) as chief of their Experimental Laboratory. There I invented and patented a few electrical appliances. In 1918 I came to Wilmington for the Du Pont Company in their Technical Bureau. I have also served in the Technical Division of the Atlas Powder Company and with the Hercules Powder Company. In 1931 I was engaged as consultant for the Farmers' Mutual Fire Insurance Company and am still with them. I am also (since 1945) consultant for the Tri-State Laboratories. For a number of years I published a motor car magazine called the *Delaware Motorist*. No military activity outside of sergeant-major of high school battalion, a corporal at Tech and a stretch in the National Guard. My youngest son, Quentin, has taken care of the military honors for the family. He was appointed cadet major at the University of Delaware. At graduation he was commissioned and went overseas for engagements in Africa, Italy, France and Germany and received citations. He also saw service in Japan. Now a captain in the Air Force. My eldest son, Robert, is a successful business man. While with the Powder Companies I wrote a number of published articles and books of a technical nature, including the article on explosives for the 14th edition of the *Encyclopedia Britannica* and a number of articles for Winston's *Encyclopedia*. My principal sports were rifle and pistol shooting and archery. These I have given up in the last few years. For hobbies, I find a little time for photography, stamp collecting and a flower garden, which, with my regular duties, keeps me quite busy, although not too busy to be of service to anyone, if I can do so without injury to myself or those having prior claim upon me."

The Alumni Office reports having recently learned of the death on July 5, 1953, of Aurin M. Chase, who graduated with us from Course II, having previously received a B.S. degree from Amherst. Chase had retired from an automobile business which he had carried on in Syracuse, N.Y., his home town. — ELBERT G. ALLEN, Secretary, 11 Richfield Road, West Newton 65, Mass.

• 1901 •

I still have a few class letter replies which came in last spring so the news is not the latest but will probably still be of interest. Fred Davidson, II, from Saratoga, Calif., writes: "Although retired, I seem to keep busy in our yard and a small shop for repairing and tinkering. Saratoga has a larger than usual proportion of retired Army and Navy men. It is right at the foot of the Santa Cruz Moun-

tains, overlooking the Santa Clara Valley and the city of San Jose." Ed Fleming, III, living in Los Angeles, says: "Retired from American Smelting and Refining Company in 1950 after 44 years service, the last 20 years as consulting metallurgist. I still do part time consulting work for a number of firms, including the A. S. and R. Company." Bart Schlesinger, V, wrote that he spent two months last winter in Florida.

A letter from Charlie Tufts, written last April, should still be of interest. He wrote: "On getting home from a trip to the southwest I found your Review and read it as always with great interest. It is sad to see the lengthening necrology, but to that, after 53 years, I suppose we must be reconciled. On our way West we detoured via Damascus and had a good visit with A. T. Hyde and his very charming wife. Austin has weathered the years better than many of us and still keeps a finger on the dye making plant of which he has long been chief executive. However, he has worked out an ideal program for progressive retirement; at present he goes to the office mornings and makes sure the plant is on the beam, and after twelve noon he is footloose. He plans to gradually shorten the mornings and extend the afternoons. He and Mrs. Hyde have a very pleasant home which they have furnished with many beautiful heirlooms from Austin's New England forebears. They are in grand country among the Great Smokies, and Abington, home of the famous Barter Theatre, is only 14 miles away. Damascus has an altitude of some 2,000 feet and we were there on February 2, but the location is somewhat sheltered and the living room was already bright with the blooms of Golden Bell. They have two sons, now on their own, of course, and both doing well as was to be expected. I urged Austin to write you and tell you how pretty he is sitting, but you know how modest he has always been and I doubt if I made much headway toward convincing him that a lot of the class would like to hear of him."

"Our own trip was wholly satisfactory. We spent two weeks soaking at Hot Springs, Arkansas, and two weeks sunning at Phoenix, Arizona, and then drifted back along the Gulf Coast, giving special attention to San Antonio, New Orleans and Mobile. All three cities are rich in historic tradition, and I must say that all three are quite aware of that fact."

I have not heard recently from Joe Evans but assume that he is getting along. If any of you have ideas about our 55th reunion and have not replied to my questionnaire, please do so soon. — THEODORE H. TAFT, Secretary, Box 124, East Jaffrey, N.H. WILLARD W. DOW, Assistant Secretary, 287 Oakland Street, Wellesley Hills 82, Mass.

• 1902 •

Several changes in address have been noted by the Alumni Office: Waldo H. Comins, 4 N. Kings Highway, St. Louis 8, Mo.; John M. Eagan, Jr., RR 1, Box 333, Largo, Fla.; Grant S. Taylor, 604 Bay Avenue, Clearwater, Fla.; Henry H. Saylor, The American Institute of Architects, 1735 New York Avenue, Washington, D.C.; James L. Taylor, Jr., 5301 St.

James Terrace, Pittsburgh 32, Pa.; and Gilbert Townsend, Ross, Patterson, Townsend and Fish, 4115 Sherbrooke Street West, Montreal 6, P.Q., Canada.

Farley Gannett spent the first three months of the year in Spain where his youngest daughter is living for a year with her children on the Island of Mallorca, about 150 miles southeast of Barcelona. In a letter to Dan Patch he writes, "I was very sorry to miss the graduation ceremonies but was delighted to get the news which you sent in your letter. I wish we could get more news about our classmates in *The Review*. It was certainly good to get back to the office again after three months' absence and to find that business had prospered better with me away than with me here. I certainly got awfully sick of living for two months on that rough and rugged Island of Mallorca, where everybody seems to be migrating who doesn't want to do any more work and wants to live for one-third or one-half of what it costs to live here.

"My daughter and her three children live in a very attractive four-bedroom house on the side of a hill above the Mediterranean for about 250 dollars per month, which includes the house at 40 dollars and a very satisfactory Spanish maid at nine dollars a month. Mrs. Gannett and I lived in a hotel for a couple of months, right on the Mediterranean, in a beautiful big room with a private porch leading out from it, overlooking the harbor and the Sea beyond, with the City of Palma, population of about 100,000, almost at our feet. Palma is a typical Spanish city — all of the houses hidden behind high walls, with beautiful gardens once you get in behind the gates to see them.

"I had never seen the Rock of Gibraltar before nor the southeast coast of Spain from the water and I was quite amazed at the picture they present. The Rock is the apex of a triangular ledge which the British own and all of the ledge is very nearly as high as the Rock of Gibraltar itself, with steep cliff-like frontage on the Mediterranean. Gibraltar is not at the narrowest part of the Straits of Gibraltar, being between 15 and 20 miles wide at that point, whereas the next point farther west is only eight miles between Africa and Europe. The whole of the southwest coast of Spain is almost as precipitous and rugged as Gibraltar and why the Moors looking at it from the Mediterranean wanted to invade it, I can't imagine. Even on the first of April when we passed along the coast we saw the mountains from the ship which were snow covered and about 10,000 feet high. Many parts of the side slopes of the mountains on either side of the Rock are paved so that rain water can be collected for the supply of the community.

"Even the little island of Mallorca is almost as unprepossessing looking at it from the north as we flew over from Barcelona, with only a small patch of green and cultivated land surrounding the city of Palma. The principal crops of course are olives and almonds, which are forced on you everywhere and are passed out with every drink you take. On the Island of Mallorca apparently every drop of water that comes down is stored in reservoirs and pumped largely by windmills from

wells to supply irrigation and drinking water for the communities.

"There are many retired Americans and English and other nationalities living on the Island of Mallorca because of the low cost of living and few of them do anything to keep occupied. My grandchildren go to Spanish schools and have naturally picked up a good deal of Spanish, as has my daughter, but they say they are learning very little and have no homework as the school hours are from nine in the morning until seven at night with two hours off at mid-day for lunch, and they can do what home work is necessary in those long hours. Well, that is part of my story and it may be interesting to some of the boys who have not been to Mallorca, which is pronounced 'Maw-yorka.' — BURTON G. PHILBRICK, *Secretary*, 18 Ocean Avenue, Salem, Mass.

• 1903 •

We regret to report the death of Austin D. Jenkins, IV, which occurred in Hubbard Woods, Ill., April 29, 1954. This report came from the Alumni Office with no further details. Jenkins came originally from Pittsfield, Mass., and was previously graduated from Williams College in 1900. A further word in connection with Glenn's accident in Paris states that he appears to be making a satisfactory recovery in spite of the terrible weather in Paris where he has been living. This has been hard on both Glenn and his wife. William L. Wing'02 died in Brookline, Mass., on September 18, 1954. No further details are available. William E. Mitchell, VI, of Atlanta, Ga., has been honored by the French government which has named him a Chevalier in the National Order of the French Legion of Honor. The Cross was presented to him on October 10, 1954, by Consul General Guy deSchompre of New Orleans. He was accompanied by the Acting Consul Agent representing Charles Loridans, who has long been the French Consul in Atlanta, but is now ill. The *Atlanta Constitution* reports as follows: "The distinction is bestowed upon Mr. Mitchell in recognition of his 'constant and active friendship' to France as a U.S. government appointee on the special mission to aid the restoration of French industry after World War II. Mr. Mitchell specialized in aiding the renovation of electric power, iron and steel, and the coal industry in France. The French Ambassador to Washington, Henri Bonnet, notified Mr. Mitchell earlier this year that he had been named a Chevalier 'by decree of the President of France.' Mr. Mitchell spent about 10 months in France in 1948-1949. He was accompanied by Mrs. Mitchell." — FREDERIC A. EUSTIS, *Secretary*, 131 State Street, Boston, Mass. JAMES A. CUSHMAN, *Assistant Secretary*, Box 103, South Wellfleet, Mass.

• 1906 •

As the time arrived for preparing these notes, the Secretary thought his only material would be taken from the number of address changes which have come from the Alumni Office. Ordinarily we have not reported these but some of the following seem to be quite significant and will be of interest.

However, we have received a letter written by Ernest M. Smith of Old Chat-ham, N.Y., submitting a clipping reporting the death of Edward Haynes Sargent, who was chief engineer of the Hudson River Regulating District at Albany, N.Y. Ernest wrote, "The enclosed is forwarded for your attention because I always thought that Ned Sargent was 1906. I am quite shocked at this news because Ned seemed to be in perfect health on the rare occasions we met. Playing a lot of golf at Taconic, Williamstown. That and building a new fire house for the village seem to be my only outside interests. Looking forward to 1956. Will surely be on hand." It happens that E. H. Sargent is listed as a member of the Class of 1907, so the clipping was forwarded to the Secretary of that Class.

With regard to some of the address changes: Andrew S. Bell, Course XIII, formerly living in Hoosick Falls, N.Y., now residing in Plymouth, N.H. Harry W. Boker, III, reported at present in Monrovia, Calif., previous address, Princess Anne, Md. Colonel William Couper, I, from Virginia Military Institute at Lexington, Va., to 106 White Street, Lexington, Va. It can be inferred from this that the Colonel, who had been President of V.M.I., has retired from that position.

Nugent Fallon, I, from Federal Home Loan Bank of New York, 165 Broadway, to 74 Greenway Terrace, Forest Hills, N.Y. Alexander Hicks, II, from c/o Arthur Whittam Company, 77 Summer Street, Boston, to 25 Hillside Road, Newton Highlands, Mass. Frederick W. Hinds, XIII, from Newton Upper Falls, Mass., to Main Street, Petersham, Mass. Charles G. Loring, IV, from Boston, Mass., to 1 Middle Street, Concord, Mass. Loring is also a Harvard man, has been a practicing architect in Boston and this might indicate that he has retired to private life. William I. Lourie, II, from Youngstown, Ohio, to St. Petersburg, Fla. Ralph N. Sargent, X, in 1953 was reported in Plainfield, N.J., latest address, Lutz, Fla. Ralph C. Thayer, III, formerly of Barre, Vt., now North Hollywood, Calif.

As these addresses arrived too late to communicate with the men involved, readers may use their imagination as to the significance of these changes. It would appear that many of them indicate retirement from active business. Our news is of a sketchy nature, but will try to do better next month. — JAMES W. KIDDER, *Secretary*, 215 Crosby Street, Arlington 74, Mass. EDWARD B. ROWE, *Assistant Secretary*, 11 Cushing Road, Wellesley Hills 82, Mass.

• 1907 •

William S. Wilson, who for many years has been director of research and plant development for Monsanto Chemical Company, with headquarters at their plant in Everett, Mass., has retired from active business. His home address is 18 Bellingham Road, Chestnut Hill, Mass., and he has a summer place in Maine and a winter property in Florida. Through the courtesy of a friend of mine who is a member of the Canadian Club of Boston, I learned on September 24 that our distinguished classmate, Clarence D. Howe, Minister of Trade and Commerce for Canada, was to

speak before that Club on October 4. Twelve announcements and invitations to this event were sent to me, and I mailed them, with accompanying notes, to twelve '07 men in the vicinity of Boston who, through the years, have proved to be "standbys" for class gatherings. On October 6 I received a note from Bob Rand saying that he and his wife attended, and that Tom Gould, Gilbert Small, and Oscar Starkweather also were present. Clarence's address, concerning trade relations between the United States and Canada, was quoted, in part, in the Boston papers on October 5. He also spoke before members of the Corporation of Northeastern University in Boston on October 5. Through the Alumni Office I have learned of the addresses of three classmates whose names are not on my regular mailing list, but who may be known by some of you: Cyrus H. Loutrel, who was in the course in naval architecture, Mason's Island, Mystic, Conn.; Herbert A. Stevens, mechanical engineering course, 419 East Front Street, Berwick, Pa.; James A. Vedder, architecture, Vedder and Curtinarch, 407 South Warren Street, Syracuse 2, N.Y.

It was through a letter from Sam Marx that I first learned of the death, on September 15, of John H. (Stud) Leavell, another one of the prominent, popular, and professionally successful members of our Class. He died in Queen's Hospital, Honolulu, Hawaii, having suffered a stroke three weeks previously. He and his wife had already enjoyed about two months of a Hawaiian vacation. Burial was in Arlington National Cemetery, Washington, D.C., with full military honors, on September 21. Stud was born July 9, 1883, in Georgetown, Texas, being the last of six children. He became an orphan at an early age, but sufficient funds were left for his education, and he was graduated from Phillips Exeter Academy, Exeter, N.H., in 1903, and from M.I.T. in 1907, with a degree in mining engineering.

He was president of our Class during our junior year and was a member of the M.I.T. track team, and of many important class committees. He has always been an independent operator as the president of various corporations concerned with oil and coal and other natural resources. Trips to Mexico, Canada, and many mountainous regions of the United States, searching for ores, marked his earlier years as a mining engineer. During more recent years he has traveled extensively in various parts of the world as a recognized authority and adviser on oil producing regions and properties. During the first week of World War I he entered the Army with the Ninety-first Division as a captain and soon received promotion to major with a combat unit of engineers, serving a year in France and Belgium. He was awarded two corps citations, a French Croix de Guerre with Bronze Star, and the Distinguished Service Cross. He was in charge of public utilities in the American Zone of Germany during the post-war occupation, with 23,000 employees under his direction, and also served on the inter-allied coal commission which directed the use of Ruhr coal shipments.

During World War II he was called on by the State Department to serve as a petroleum attache, and was promoted to

colonel. On this job he traveled 100,000 miles in Egypt, Iraq, Iran, Saudi Arabia, and Syria, spending seven months in Tehran. Since 1920 Stud made his home in Tulsa, Oklahoma. He was a prominent citizen, not only through his business interests, but also because of various community activities. He was a director of the Fourth National Bank, a Knight Templar, and a 32d degree Mason. In the winter of 1931-1932 a commissary plan, put into operation in Tulsa when he was appointed on a committee of five by the mayor to be in charge of relief work, became nationally known because of its efficiency. In November, 1953, he gave 100 shares of stock, worth about \$2800 annually, to establish a college fund for residents of the Tulsa Boys' Home. Two days after our graduation in 1907 Stud married Rama Doble of Quincy, Mass. They had one son, Peter H. Leavell, who was killed in an accident in 1940, at the age of 20. This first marriage ended in divorce in 1935, and in 1938 Stud married Patti Johnson, a Tulsa pianist. Mrs. Leavell's home address is 2160 South Norfolk Terrace, Tulsa, Oklahoma. We shall especially miss Stud at our class reunions, where his jolly cordiality and his very evident delight at meeting old classmates made him a favorite with all of us, whether or not we ever saw him except at reunion times.

In the November issue of *The Review* I recorded the death of André T. Kolatschewsky that occurred on May 13, 1954. On September 30 I received from Nicholas J. Kolatschewsky, André's son, a letter written in response to a letter of sympathy that I had mailed to the family of our classmate. I quote: "My mother has asked me to answer your most kind letter of August 18 and to tell you how much we have appreciated your sympathy, and that of the 1907 Class. It has, of course, been a very great loss to her, and to us, as my parents were very devoted and were together for about 46 years. My father retired from the Bell Telephone Manufacturing Company at Antwerp, Belgium, in August, 1950, and came to live with my family in October, 1950. After his retirement he continued to play the violin, and he translated one of his plays from French into English. Also he was busy perfecting a model of one of his inventions. In August, 1951, he had a severe illness from high blood pressure, from which he seemed to recover completely after about a year. Shortly before his death he suffered from severe pains in his chest and he died of coronary thrombosis. My mother, and her mother, aged 87, live with us at St. Helens, 48, Sussex Place, Slough, Bucks, England. My parents had three children, but my two sisters died, one at birth, and the other at the age two and a half years. I was born on February 6, 1910, am married and have one son nearly five years old. I work in a metallurgical research laboratory and teach languages at evening schools. My father often talked of you all, and of his happy days at the Institute of Technology, and I shall be pleased to hear from his old friends."

According to a news item in the *Boston Herald* of October 9, 1954, Charles M. Curl, age 74, a classmate of ours who, although he has lived in the vicinity of

Boston during his entire life, has never attended any class gathering, died on October 8. He was a graduate in the course in naval architecture. From 1920 to 1951, when he retired, he was an instructor, later an assistant professor, in the department of graphics (we called it "descriptive geometry") at M.I.T. He is survived by his wife, Mrs. Elsie Crosby Curl of 15 Orient Place, Melrose, Mass., and by a daughter, Mrs. Chester U. (Vega) Stevens of Saylesville, R.I.

From a clipping from the *Albany (N.Y.) Times Union* of October 11 I learned of the death on October 9, 1954, of Edward H. Sargent, who was associated with our Class in the course in civil engineering. From 1907 to 1922 he was engaged in various engineering capacities for the State of New York, except that during 1917 to 1919 he was a captain of engineers with the United States Army in France. In 1922 he was appointed chief engineer of the Hudson River Regulating District, and he still held this position at the time of his death. In this capacity he prepared the general plan for the regulation of the Hudson River and certain of its tributaries, which called for the eventual construction of 16 reservoir projects. He was in charge of the design and construction of the first of these, the Sacandaga Reservoir, costing \$12,000,000, and having a capacity of 283 billion gallons, with an area of 29,000 acres. His home was at 302 Washington Avenue, Albany, N.Y. He is survived by his wife, Mrs. Emma H. Sargent; two daughters, Mrs. Richard B. Parkhurst of Gloversville, N.Y., and Mrs. Benjamin L. Loeb of Muskegon, Michigan; one son, Edward H. Sargent, Jr., of Albany; and nine grandchildren.

Please keep in mind two out-of-the-ordinary projects: (1) The 1955 Alumni Fund which will be entirely devoted to the new laboratories for nuclear science, nuclear engineering and electronics, that will be a memorial to the late Dr. Karl Taylor Compton. (2) Our 48-year class reunion to be held at Oyster Harbors Club, Osterville, Mass., June 10-12, 1955. You have already received announcement material regarding both of these big 1955 events. May your action concerning them be enthusiastically favorable! — BRYANT NICHOLS, *Secretary*, 23 Leland Road, Whitinsville, Mass. PHILIP B. WALKER, *Assistant Secretary*, 18 Summit Street, Whitinsville, Mass.

• 1908 •

We noted in the *Boston Herald* of October 5, 1954, the following: "Maurice P. Meade, 72, of 7 Clark Road, Brookline, ecclesiastical architect and designer of post offices in Worcester, Somerville, Arlington and Brookline, died yesterday. He was a graduate of the Brookline public schools and M.I.T. He was a member of the American Institute of Architects and of the Brookline Council, Knights of Columbus. He leaves his wife Ann C.; a son, the Reverend Maurice P. Meade, Jr., of St. Joseph's Church, Medway, and a daughter, Mrs. Robert J. McCourt of Newtonville; a sister, Mrs. Henry J. Quinn; and five brothers. The funeral will be from his home at 9 A.M. Thursday with a solemn high mass of requiem at St. Mary's of Assumption Church, Brookline."

We have just learned of the death of Basil L. Gimson at his home in England on May 28, 1953. Basil retired several years ago, after many years as Senior Master at Bedales School, Petersfield-Hants, England. It was at Bedales School that he prepared for entering M.I.T. We are also sorry to report the death of C. Hamilton Preston on April 14, 1954, at his home in New York. We are afraid our pleas for news have fallen on deaf ears. Why not send us some live news of yourself or other classmates while you can. — H. LESTON CARTER, *Secretary*, 14 Roslyn Road, Waban 68, Mass.

• 1909 •

Most of our space in last month's Review was necessarily devoted to the Reunion and we trust that our description of it was reasonably satisfactory to those who were present, as well as to those who could not attend. One happy result of the Reunion was the fact that letters were received from several who could not attend and from whom we had not heard for a long time. Owing to space limitations in the November Review, which is a heavy number anyway, and also to assist The Review Staff by spreading the notes over subsequent issues, we have deferred presenting the content of these letters to this and later numbers.

Freddie Green, VI, was one of those from whom we had not received news for many years. He is now a Colonel, U.S.A., retired, and lives in Colorado Springs, the location of Francis Loud's alma mater, Colorado College. Fred wrote to Francis as follows: "Ordinarily I don't pay much attention to notices of class reunions because I have no intention of attending them. But I haven't forgotten your kind assistance to me one night, in 1916, I think, on a Fall River steamer. So I certainly owe you a word of appreciation and a most cordial greeting even at this late date. I can't help being amused at the curious reversal of our histories. Having been raised in the Boston area, I insist on living here; while you, presumably born here, have gravitated to Boston. Is it that 'one man's meat is another man's poison,' or that we all crave change? As you probably know from other sources, Colorado Springs has grown enormously; it is built up now almost to Austin's Bluffs. It is not at all the same town we used to know, but still a delightful place to live!"

Mayo Hersey, II, who has long been recognized as one of the leading authorities on lubrication, by chance found The Review Secretary in his office at Harvard last summer when Mayo happened to be around on other business. He is now technical consultant and I.C.E. (internal-combustion-engine) head at the U.S. Naval Experiment Station at Annapolis, Md. He is senior author of a monograph just off the press, "Viscosity of Lubricants under Pressure — Coordinated Data from Twelve Investigations." It was published by the American Society of Mechanical Engineers and covers the essential results of a long research conducted for the A.S.M.E. Research Committee on Lubrication. Mayo writes as follows: "Thank you for your letter of April 20 with postscript. I am sorry that I cannot seem to get away in time for the M.I.T. Class of 1909 re-

union but shall try to make our fiftieth. I hope to be at my summer home on the Cape (Monument Beach) for a few weeks beginning July 2. Though I had few acquaintances in the Class, I should like to have you include my greetings along with those of other absentees. Remember me especially to Chet Dawes whom I see every few years when visiting in Cambridge. My wife and I have a small apartment close by the Main Gate of the Naval Academy. The climate here is ideal in the winter and much more attractive than Washington in the summer. I am due to retire in about two years and may come to live in New England. Perhaps I can begin all over again then to get acquainted with my classmates."

As many of you will recall, at the fortieth reunion Haylett, VI, and Ethyl O'Neill flew overnight from Houston, Texas, to Boston, arriving on Friday morning. He writes as follows: "I had hoped to get to the Class Reunion this year but now find it is impossible for me to do so as I must take a trip to the West Coast at that time and will be tied up for at least three or four weeks. I wish you and all the rest of the gang the best of everything and hope to make it next time. We certainly enjoyed the visit to Osterville with you all and particularly appreciate the kindness of Chet Dawes and his wife in taking us down through the thick crowds of Bunker Hill Day from Boston."

Charles Radford, I, who owns a big trucking business in Oshkosh, Wis., has sent the following letter: "I would surely like to come but it is an impossibility this year. I have not been in Boston or vicinity since 1910 which is without question a long time. As a result, I have seen only a few 1909 classmates. Used to have a pleasant visit with Louis Jacoby when he was with Chase National Bank as their Chicago correspondent, but he has now retired and no longer comes up this way. Hope to get back East before too many more years slip by."

Elmer Robinson, VII, who is professor of philosophy at San Jose State College, Calif., writes: "Although I am to be in Boston this summer, teaching at Boston University summer session, I shall not be able to arrive in time to attend the reunion. This I regret."

Johnny Willard, II, received the following letter from Francis Soderstrom, III, or "Sodie" as he calls himself: "You know the old saying, 'the better the day, the better the deed,' hence the letter on the Fourth of July really ought to be something, or shouldn't it? However, it is a typical Arizona day for this time of the year. Temperature over 100 degrees at the time of this writing (1:00 P.M.) and the humidity is up due to the rain we had last night. This summer we have had some rain in June, whereas it usually does not show up until the Fourth of July. But as we are living in an age of uncertainty it might explain the early arrival. First, thanks for your nice letter of June 16 which I enjoyed very much. Re: the 45th Reunion, besides yourself there are only three names in the list that I distinctly remember, D. K. Bullens, Chet Pope, and Henry K. Spencer. D. K. because he was in the same course III, Chet Pope who used to live in Winthrop and we came

over on the same ferry to Boston, and Henry Spencer as we both came from the Mechanic Arts High School. If you ever see H. K. give him my regards. He might not remember me. Living out here in the West, I have been well weaned from Boston, hence have no desire to visit that place again. Pleasant recollections of the place, yes, but that is all, for I know it has changed considerably even if the people have not. Since our usual Christmas cards I have again married so hope to continue this life with someone else to care for. In fact hope to have a honeymoon trip starting the 7th of this month (July). Intend to go to the West Coast and then up to Portland, Oregon, and then east through Montana to Yellowstone National Park, thence south to Salt Lake City and to the north rim of the Grand Canyon, and then to Phoenix. Whether we accomplish all of this remains to be seen. At least these are our present plans. Enough for now John, so until the next time when I should have more to write about, the best of everything to you and yours." — CHESTER L. DAWES, *Secretary*, Pierce Hall, Harvard University, Cambridge 38, Mass. *Assistant Secretaries*: HARVEY S. PARDEE, 549 W. Washington Street, Chicago 6, Ill; MAURICE R. SCHARFF, 366 Madison Avenue, New York, N.Y.; GEORGE E. WALLIS, Wenham, Mass.

• 1911 •

One of the by-products of compiling data for a new Register of Former Students, such as is now being done at M.I.T., is learning of the decease of some Alumni. In our own case we learned of the passing of two of our classmates: Lester A. Stover, II, of Overland Park, Kansas, on December 1, 1952; and Howard R. Schulze, IV, of New York City, last July 2.

We have been unsuccessful in securing any further information on Stover, who came to us as a transfer student from the University of Minnesota in our junior year and spent many of his years of engineering practice in Northern California before moving to Kansas in the mid-forties. In reply to a letter of sympathy, Howard Schulze's widow, the former Teresa Long, said she would try to send me "a summary of the most interesting events in Howard's life," but at this writing nothing has yet come. "Unfortunately," she continued, "Howard died at the start of the long July 4 weekend and we were in the country on our holiday, so that there was very little in the papers."

Last summer Bun Wilson, XIV, President of Alcoa, was chosen, "Western Pennsylvania's outstanding industrialist for 1954," by the Society of Industrial Realtors and that group and the Development Council of the Pittsburgh Chamber of Commerce honored "the Chief" at a Columbus Day dinner in Hotel Schenley. In a feature article for the Pittsburgh *Sun-Telegraph*, Columnist J. James Moore reported that when Wilson was told of this dinner, honoring him during Pennsylvania Week, he said: "There's no reason for them to go to all that trouble."

Here, according to Moore, is how Bun got his nickname, "Chief": "When I was a youngster in Bloomington, Illinois, the fire chief was a man named Wilson. Later

the Pittsburgh Pirates had a ballplayer named Wilson, who was also called 'Chief.' I just inherited the title because my name happens to be Wilson, too." In 43 years with the company Bun has missed just one half-day for illness. He loves to play gin rummy and bridge and is a whiz at both, but he doesn't play golf.

"Back in 1911," Moore writes, "when this lanky, 21-year-old electrochemist from M.I.T. started his career in Alcoa as a research technician, the company was producing 40 million pounds of the miracle metal. And looking back to that beginning, Wilson recently reminisced: 'I figured I'd missed the boat, I was only sorry I hadn't been able to join the company sooner, because its expansion had just been completed.' That could easily go down as the world's greatest understatement, for Alcoa's output was boosted under his tireless guidance from 327 million pounds in 1939 to a record wartime 1,640,000,000 pounds in 1943. And as a further matter of record the company in 43 years has risen from \$21 million annual business to more than \$700,000,000 and under Wilson's direction Alcoa spent \$300 million of its own money on new facilities during the war years and also built \$450 million worth of government plants without fee or profit.

"In 1948, former Secretary of the Navy John L. Sullivan asked Bun to go to Washington for an important matter. If he had told Wilson what it was all about he probably would have never showed up. But when he arrived in Washington he was presented with the President's Certificate of Merit 'for outstanding fidelity and meritorious conduct in aid of the war effort.'

"During World War I he served in the chemical warfare service and attained the rank of major. In 1950 he was named the aluminum industry's 'Man of the Year' by *Modern Metals*. Here is what a leading competitor thinks of the Chief: 'He's the statesman of the aluminum industry by any yardstick. His intimate knowledge of aluminum, his fairness and his farsightedness put him in a class by himself.'

"Bun and his wife, the former Katherine Whalen of Massena, N.Y., live at 1201 Murryhill Avenue in Pittsburgh and have three married daughters: Mrs. Edward P. (Katherine) White of Pittsburgh; Mrs. Herman Oakley (Anne) Baker of Wellesley, Mass.; and Mrs. William R. (Margaret) Ryan of Worcester, Mass. Many persons will tell you that this six-foot tall leader with white hair is a man of few words. But there's one sure way to get him talking — ask him about his six grandchildren. They are his greatest pride and joy."

Another proud 1911 grandfather was shown in an intimate camera study on the editorial page of *Old Colony Memorial*, published weekly at Plymouth, Mass., in its August 26 issue. The caption read: "Helping Grampa O. Wellington Stewart pick some of his fat, juicy, sweet cultivated blueberries beside his home on Elm Street, Kingston, is 18-month-old Jencie Stewart, one of his 10 grandchildren." The feature article which accompanied this fine snapshot predicted that Cape Cod cranberries will have to move over and share the spotlight with blueberries, if an energetic group of local horticulturists

have their way, under a title "Kingston Man's Prize-winners Are Long On Taste." "Attention was focused on a steadily-increasing local crop earlier this month when the first exhibit of cultivated blueberries in this country was held in Boston's Horticultural Hall," writes Bruce F. Smith. "Copping five first prizes were Mr. and Mrs. O. Wellington Stewart (I) of Elm Street, Kingston, who have two acres of blueberries of many varieties under cultivation."

We are indeed indebted to Carl Richmond, I, who sent in this Stewart clipping. Carl added that in Hurricane Carol O. W. lost a large peach crop (of prize specimens) and about half of his apple crop. (Note: We of New England are delighted at this mid-October writing to find that Hurricane Hazel went entirely to the west of New England. We don't want any more!)

Congratulations are due Roger T. Boyden, I, on his recent appointment as director of the Bureau of Finance, Interstate Commerce Commission, to succeed Charles E. Boles. Boyden, with I.C.C. since August, 1915, has been assistant director of the bureau since 1948. Born in Philadelphia he studied engineering for a couple of years with us and received his B.S. and LL.B. degrees in public utilities and valuation from George Washington University. He started with ICC as a junior civil engineer, subsequently becoming a senior civil engineer and valuation examiner. He has been with the Bureau of Finance since 1932. Good directing, Roger!

Our eagle-eyed fellow-Class-Secretary Cac Clarke'21 sent me a clip from the *Newark Evening News* of September 24, with the smiling countenance of a good classmate at the top, with the caption: "New Post — Richard H. Ranger of 574 Parker Street, (Newark, N. J.) president of Rangertown, Inc., has been elected executive vice-president of the Audio Engineering Society. The company manufactures magnetic tape recorders, primarily for motion picture sound." We've written Dick for details, so more on this in a future issue. When returning to Framingham and joining the Rotary Club here, it was so nice to find that Felix Duffy, brother of Jim Duffy, VI, is an active member. Felix has a boy who just entered M.I.T. this fall and already congratulations are due him, for William F. Duffy has recently been elected a member of the Freshman Council which is composed of one man from each of the 35 sections of the Class. Bill was graduated from Sacred Heart School, Newton Center, in 1954 and is also participating in freshman track.

Learning that "ye Sec" was planning to make his usual New York hiatus (for the Annual Meeting of the American Retail Association) shortly after New Year's, President Don Stevens is lining up another "Welcome To Dennie" luncheon on Tuesday, January 11, at the Architectural League, 115 East 40th Street. If YOU happen to be in New York that day, join the Metropolitan '11 men for cocktails at noon and lunch at 12:30. This year, according to Don, "we will have three 1911 artists (?) hanging, so come early and enjoy the exhibition!"

How thrilling it was to learn that the M.I.T. Alumni Fund Board has decided that "the entire 1954-1955 Alumni Fund will be used for the Karl Compton Memorial — new laboratories for nuclear science, nuclear engineering and electronics! As Class Agent nothing would please me so much as to see this current year's combined 1911 pledges mark an all-time high as an attest of the high esteem in which all of us held Karl Taylor Compton. Let's go all out this year, as never before, and that will be something, for 1911 has a fine record for every year of the Fund to date.

Revision of the Alumni Register has also brought a number of address changes for classmates, including: Harry S. Alexander, II, R.D. 1, Meadville, Pa.; Harold E. Babbitt, XI, 1800 Taylor Street, Seattle 9, Wash.; Lewis L. Baxter, IV, 223 San Juan Drive, Ponte Verde Beach, Fla.; Richard W. Cushing, VI, 3206 Rolling Road, Chevy Chase 15, Md.; John H. Gavin, V, 60 Union Street, Manchester, Mass.; Louis Grandgent, IV, 793 Wellesley Drive N.W., Atlanta, Ga.; Maurice J. Lowenberg, VI, 158 St. Paul Street, Brookline 46, Mass.; Henry Schreiber, XI, 37 Hickory Road, Wellesley 81, Mass.

Don't forget: If you are in or around New York on Tuesday, January 11, drop in at the Tech Club in the Architectural League, 115 East 40th Street, for cocktails, luncheon and the 1911 art exhibit, with three '11 artists hanging! It's a bit late but none the less hearty: A Happy and Prosperous New Year to You All! — ORVILLE B. DENISON, *Secretary*, Framingham Chamber of Commerce, Framingham, Mass. JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Avenue, Medford 55, Mass.

• 1912 •

Fred Barker has been signally honored in being nominated as a member of the Visiting Committee for the Department of Humanities, at M.I.T. This will keep him in touch with Institute affairs and should be a very interesting assignment. Fred reports that his wife whose broken ankle prevented their being at Snow Inn last June, is now completely recovered, although it was very painful during the summer.

We regret to report the death of George H. Abel, II, Huntingdon Valley, Pa., in November, 1952. Carlos P. Echeverria, II, passed away on August 9 at his San Carlos Ranch in Montezuma, Ga., where he retired two years ago.

A. G. Herreshoff, XIII, has just retired as executive engineer in charge of development design after more than 27 years with Chrysler Corporation and was honored at a testimonial dinner at the Grosse Pointe Yacht Club. Herreshoff joined Chrysler Corporation in 1927 as an engine designer, following 16 years' experience in development and design work with a number of shipbuilding and automotive concerns, including the Consolidated Ship Building Company, Mack Truck Corporation and Fifth Avenue Coach Company. He was named chief engineer of the Fargo Commercial Car Division in 1928 and served successfully as chief engineer for Dodge Truck; assistant chief engineer, chassis design; chief engineer of research,

and chief engineer, development design section. He has been a member of the Chrysler Corporation Engineering Board since its formation in 1946.

Among the pioneering ventures to which he contributed are the original Bulldog Mack truck, the first of the modern Fifth Avenue coaches and the earliest lines of Chrysler-built Fargo trucks and buses. The design concepts of the present V-8 hemispherical combustion chamber engines used by Chrysler Corporation were originated under Mr. Herreshoff's direction.

In 1942 he was invited by the British Government to visit England as one of eight aeronautical experts representing American industry. At the close of the war he was chosen as a representative of the U. S. Army Air Force to investigate engineering developments in Germany. He is living with his wife at 473 Lincoln Road, Grosse Pointe, Mich.

Bill Glidden, I, has been nominated by the Board of Directors as president of the American Society of Civil Engineers. Bill is assistant chief engineer of the Virginia Highway Department. L. T. Cummings retired August 1 as vice-president of McQuay Norris Manufacturing Company. Pie says that he will now have a chance to attend class reunions and drop in on classmates around the country. We will all be glad to see him.

The following 1912 men were at the Alumni Day lunch in June: Stobert, A. F. Allen, Golson, Noyes, Busby, Wiseman, Schell, Manning, Barker and Shepard. These men were also present at the dinner the same evening with the addition of Harvey Benson, Bill Collins, Cy Springall, Jim Cook, E. W. Davis, Albion Davis and Gerry Hunsaker. —FREDERICK J. SHEPARD, JR., *Secretary*, 31 Chestnut Street, Boston 8, Mass. *Assistant Secretaries*: LESTER M. WHITE, 4520 Lewiston Road, Niagara Falls, N. Y. RAYMOND E. WILSON, 8 Ogden Avenue, Swarthmore, Pa.

• 1913 •

Indian Summer is here in full bloom, 86 to 90 degrees in this New England climate, including Boston and Cambridge. Are you all politically minded like your Scribe? We hope to send an "Eisenhower" House and Senate back to Washington to "Ike." The Big Business, the Little Business, the Engineer, the Wage Earner, the Union Man all need a Republican Congress. Why stop halfway? We hope that you are giving our great President your support, not for any Party but for all Americans, whether your ancestors came over on the Mayflower or otherwise. Let's keep the good old U.S.A., "Of the People, For the People, and By the People."

The retired classmates are beginning to outnumber the still active or wage-earning members of the Class. Of course, you know Fred Murdock has disposed of the Murdock Webbing Company and now sojourns in Barrington, R. I., at 88 Rumstick Road. Good Luck, Fred. If you left out the "t" in your address it would look very bad for you. We have received a very interesting letter and a copy of *Lubrication*, published by the Texas Company describing Allen Brewer's retirement

from its employ and becoming self employed, and we quote in part, "You will note that I have retired from active service with the Texas Company, and by the nature of this letterhead I am posing as a quasi consultant with my endeavors devoted mostly to writing. Already I have started actively to work on the text for a book to deal with practical lubrication for the plant engineer, incorporating notes and experiences I have gathered during the past many years I have been connected with the oil industry. Hope to sign formally with my publisher shortly so the book can be copyrighted in 1955. This venture will afford me a wonderful transition from the chore of commuting daily to New York because I will continue to be active by reason of a considerable amount of correspondence required in connection with illustrations for my book." Allen has been with the Texas Company since July, 1919 to July 1954. For 26 years he has been the editor of the *Lubrication*. He is a member of the American Society of Refrigeration Engineers, the Association of Iron and Steel Engineers, the American Society of Mechanical Engineers, and has been elected an Honorary Life Member of the American Society of Lubrication Engineers and consulting editor for *Lubrication Engineering*. So now with his new Remington Office-Ritter and his combination lathe and drill press with a shaper attachment for his work shop he settled down to a life of a writer and handy-man on the Indian River area in sunny Florida. Allen saw Larry Hart a few weeks ago at the Engineers Club in N. Y. Well, my friend you have lived well and you surely deserve your life of leisure. Since the receipt of the above information from Brewer we have been notified that he has deserted N. J. and now resides at Jensen Beach, Fla. Are we all going soft and can't take the rigid winters of our northern clime? The Class of 1913, or its members have not all joined the Marines, but they surely do see the world as related by George W. Duncan and we quote: "I am going to be located at the University of the Philippines as a representative of the engineering faculty of Stanford University in connection with the work of the Foreign Operations Administration. In view of this, I would like to have you change my address as follows: George W. Duncan, USAOM, FOA, APO 928 c/o Postmaster, San Francisco, Calif. My date of departure from this country is October 9, 1954, and my stay will be for one year." *Bon Voyage*, George. I have talked on the phone several times with Bill Ready and also received a short note from him. He seems very cheerful and as usual very jolly and we quote: "I think that I am improving every day but I still have the old cane to hobble about on and probably will have it a long time. When I begin to feel like my old self I usually have my ears knocked back. However, the Good Lord has been more than good to us and I have no kick coming whatever. Not much news, Phil. Saw Charlie Thompson a while back but no one else. But you know, I never dreamed that there would be so many things to do when you have nothing to do. Our best to the missus and you." We are always pleased to hear from

Pop. "Prof" Townsend relays the news together with a formal announcement of Sam Selfridge's retirement from the Standard Oil Company of California. Sam has served in many capacities with the Calso since January 6, 1922. When he retired July 1, 1954, he was assistant treasurer. Al writes that Sam's twin brother, John, is assistant secretary of Calso, but appears that he is still hanging on. Maybe he, too, has joined the unemployed. If so, I'll bet Calso will close its doors. Jim Russell visits Townsend frequently but does not condescend to send us a post-card. Milton and Canton are contiguous. Maybe Carol or Edna destroyed Jim's telephone line. Gerry Lane has finally left Eastman and Rochester. He left for Santa Barbara, Calif., about the end of September. That State now houses more of our Class than Florida! Bill Brewster, as president of the Pilgrim Society of Plymouth, Mass., shared the limelight with Attorney General Herbert Brownell, Jr., Henry Hornblower, president of the Plymouth Plantation, Walter M. Pratt of Brattleboro, Vt., governor general of the General Society of Mayflower Descendants, together with our genial Governor Christian A. Herter. These notables were assembled at Plymouth September 13, 1954, at the 20th congress of the General Society of Mayflower Descendants. We, too, are proud of our Pilgrim ancestors (which is debatable), but we are sure of our Puritan ancestry. Bill Dana H. Gillingham writes: "Dear Fred, with the exception of you and George H. Taber, Jr., who recently died in New York, I know none of the famous Class of 1913. In 1910-1911 I took a course, which might be called a P.C. in Sugar, as I had accepted a position in Puerto Rico. Dr. Rolfe and Talbot sure did a job on me, as I became chief chemist of Centrale Fortuna the following year. During the 1920's I became president of the Tech Alumni in New Bedford during the Colonel Green era. Although I enjoy many Tech friends I have never felt worthy of the title "Alumnus" or that anyone in the Class of 1913 could possibly be interested in my historical treks through the maze of business and government. Eventually, Cape Cod pneumonias and my wife's condition required a change of climate. Prudence said Florida, in which I am proud to become a semi-retired resident. It has done well by us both. My best wishes to Jack Fallow, if you ever see him, and my sincere Best Wishes for your health and happiness." Note address: 1444 Southwest 14th Terrace, Miami 45, Florida. You see what I mean? Enjoy yourselves in Florida and keep your hurricanes down there, we have had three in two months although that longhaired woman Hazel avoided us and merely shed a downpour of tears.

Alumni Day, June 14, 1954 (although not reported to you in the last issue), proved as usual to be an outstanding day in our lives. Many of us enjoyed the luncheon in the Great Court. President Killian and the Staff as well as distinguished guests described the progress made during the past year at the Institute and what we could expect in the future. A select but small group of 1913 men with some of the wives participated

in the Luncheon, including: the Walter Muthers, the Newt Eicherns, the Rusty Sages, the Phil Capens, the Lawrence Browns, then the following unattached classmates, Frank Archard, Ed Cameron, Jack Horner, Jeff Rollason, and Bob Weeks. We men were joined at the Alumni Banquet by Charlie Thompson, Burt Cushing, Tom Collins, Austin Wardwell, Phil Terry, Lester Gustin, Allan Waite, and Bill Flanders. A very enjoyable evening but we missed many of our regulars, Pop Ready, Bill Mattson, and Fred Murdock and many others. We shall make an effort next year to wake up the rest of you boys.

We in our home are very, very sad and sick at heart tonight. Late yesterday Bill Mattson called and advised us that his ever gracious and much beloved wife, Mabel, had left us and had gone to her Maker. We had reported to you all some time ago that Mabel had been in the Newton Hospital for a major operation in June. This was considered to be a very successful one. She was recuperating very nicely and with her family spent a very enjoyable vacation in Canada. About a month ago, she had a relapse and entered the Phillips House and appeared to be on the road to recovery even on Friday morning. Mabel passed away Saturday morning and we know that all of our classmates who knew her for sterling qualities and industry she displayed in every pleasure and task will miss her and grieve for her as we do. To Bill and Janet goes our heartfelt sympathy for they have lost a most wonderful wife and Mother. Mabel has been a leader in church work as well as an ardent worker in the political field. Mabel in her own right was one of the founders and charter member of the Newton Republican Club and was serving on the Executive Committee at the time of her death. She had served as an officer and member of the Women's Republican Club of Massachusetts. For the past two years she had served on the Executive Committee of the Massachusetts Republican State Committee. Mabel Mattson was a member of the First Unitarian Society of Boston, a member of the Unitarian Service Committee and the Alliance of the West Newton Church. The funeral services were held in the Unitarian Church, Washington Street, West Newton, Tuesday afternoon, October 19, 1954, at 2 o'clock. — FREDERICK D. MURDOCK, *Secretary*, 88 Rumstick Road, Barrington, R.I. GEORGE P. CAPEN, *Assistant Secretary*, 623 Chapman Street, Canton, Mass.

• 1914 •

Back on the job again! Your Secretary feels that he has deserted the Class a bit by his recent absences, but expects to do better from now on. It will be recalled that he was on the Pacific Coast for the month of May, just before our Fortieth Reunion, and then following the reunion spent three months in Europe and the Near East. Thanks to Herman Affel and to my own secretary, the class affairs were kept moving. Now, however, comes the time for more notes, and the file is nearly empty. Several letters from those who attended the reunion have been received in response to the request for suggestions as

to place and events for our forty-fifth. On one point there is not entire agreement, namely, place. Many favored the Sheldon House near New Haven, where we have held our last two. The great advantage of this location is that it is between Boston and New York. There have been several suggestions that the place should be near Cambridge so as to combine our reunion with Alumni Day. Your officers certainly would like to hear from all of you as to your wishes. Please write one of your officers any suggestions you may have.

On September 30 Roy Parsell took an important part in a conference at Hartford on the subject of, "The Importance of Inventions and Patents." The conference was sponsored by a large group of Connecticut industrial and technical groups, as well as by the National Association of Manufacturers. Roy, who for two years was chairman of the Connecticut Technical Council and is currently its secretary, presided at the luncheon where the two feature speakers were Governor Lodge of Connecticut and Doctor Dunning, Dean of the Faculty of Engineering of Columbia University. For many years Roy has been engaged in patent work with what is now called the Winchester Operations of Olin-Mathieson Chemical Corporation at New Haven and is currently head of the Department.

Two notices of retirements have been received recently. The first is that of Frank Jerome, Executive Vice-president of the New York Central Railroad, at the end of 40 years service. He started with the railroad as a transit man in July, 1914, and until more recent years had his headquarters in Chicago. He will now leave New York and make his home in Fort Lauderdale, Fla. The second retirement is that of Roy Cross, who has also had 40 years of service with one company, the Westinghouse Electric Corporation. Most of the time was spent at the East Springfield, Mass., plant, where he was manufacturing engineer. Cross is well known for his research in the testing equipment phase of quality control, for which he received in 1939 the highest Westinghouse award. He plans to remain in the Springfield area.

The class agents are being called upon this year for a special effort in connection with the Alumni share of funds for the new and much needed physical sciences building, which will be named in honor of the late Doctor Compton. In addition, our contributions will be credited towards the 1914 Fifty-Year gift. Give Affel prompt and generous support when the appeal arrives. — H. B. RICHMOND, *Secretary*, 275 Massachusetts Avenue, Cambridge 39, Mass.; H. A. AFFEL, *Assistant Secretary*, 120 Woodland Avenue, Summit, N.J.

• 1915 •

On September 24 at The Faculty Club, M.I.T., 33 classmates and their guests enjoyed another big Class Dinner. Sons of the Class and guests are always welcome. This excellent attendance would have reached a record but for the unavoidable cancellations of some hurricane victims — Loring Hayward looking for his lost property, Charlie Norton marooned in Martha's Vineyard (but he phoned us at the

dinner), Clive Lacy with a strapped-up back from chopping trees, Louis Young — who knows? Jack Dalton away on business, Ernie Loveland, Reggie Foster and Al Sampson on vacations and several others were good enough to write their regrets. From Gary, Indiana, regular attendant Ed Sullivan wrote: "Yes, I would like a lobster, but Gary, Indiana, is a long way from Boston. Have been here since August first and do not expect to get home until October. Job is very interesting. I'm going for a cruise in the Mediterranean on January 14. Any one want to go?" Ah, these bachelors and their cruises. Maybe this will be the time for Ed. We greatly missed the New York and Connecticut contingent who added so much to our Spring Meeting. Try to make it next time, fellows!

Present were: Bill Brackett, Evers Burtner, Whit Brown, Dinger Doane, Vince Goddrott (Dinger's guest), Sam Eisenberg, Abe Hamburg, David Hamburg (Abe's son), Peter Hooper, Wink Howlett, Larry Landers, Arthur I. Zich '35 (Larry's nephew), Azel Mack, Archie Morrison, Frank Murphy, Frank Murphy, Jr. (Frank's son), Harry Murphy, Dick Murphy (Harry's son-in-law), Pete Munn, Dick Currier (Pete's guest), Pirate Rooney, R. W. MacCormack (George's guest), Frank Scully, Don Severance '38 (guest of the Class), Jac Sindler, Henry Sheils, Speed Swift, Elmer Waters, Easty Weaver, Herb Whitcomb, Carl Wood, Ed Maher (Carl's guest, and Henry's son-in-law), Max Woythaler.

Long-time-no-see winner was Herb Whitcomb and we were all glad to welcome him back to the Class. Speed Swift again took the long-distance prize and Frank Scully got A for effort — he flew in from Toronto, arriving at the dinner with his luggage. It was a pleasure to have Alumni Secretary Don Severance with us. He spoke briefly but complimentary about the 1915 spirit and undoubtedly saw an excellent example of what makes a successful Class successful! Come again, Don.

Max and Weare announced definite plans for our Fortieth Reunion at the new Coonamessett Inn, Falmouth, Mass. (on the Cape), Friday, June 10 to Monday, June 13. Returning to Boston Monday for Alumni Day and our Cocktail Party at 4 p.m. for ladies and families at the Algonquin Club, Boston. This has been ably arranged by Al Sampson and Barbara Thomas and undoubtedly will put everybody in good cheer for the reunion finale at the Statler Stein-on-the-Table Dinner that night. Plan now to be with your Classmates for this rousing Fortieth. See you there, eh?

At our Class Dinner Dinger Doane distributed a booklet, "Taxes and a Sound Economy," published by Rockland-Atlas National Bank of Boston where Dinger is associated. Get ready for a big Reunion kick-off dinner at The Chemists Club, 52 East 41st Street, New York City, Friday, January 21, 1955. Hank Marion and Larry Landers are arranging this and it should surpass even the big party we had there last year. Plan now to be there. A big gang is going down from Boston. Max and Jack Dalton are working on the selection of a chairman for the Special Gifts Committee for this year's Alumni

Fund. It is the hope and plan for this man to raise our individual and average contributions substantially as our share toward the new memorial for Dr. Comp-ton, which you've read about. Jack is organizing the general Alumni for this as he did on the recent big drive. Good luck to him and Max on this for 1915's share.

More letters from loyal old stand-bys who couldn't make the Boston dinner: Ben Neal writes, "I don't know whether I am in the doghouse or not, but if I am, wish you would take me out! I have a recollection that I had a letter from you early in the summer, saying that you expected to drop off to see us, and I don't know now whether I replied at the time, giving you a cordial invitation or not, but in any event, of course, the season has gone by without seeing "good old Azel." However, this country isn't bad in the fall, and if you have any plans, we would be delighted to see you. This morning I have your fly sheet on the Pre-Fortieth Reunion Dinner, on which I note that you have used a little literary license, which is okay, and promised that I would be there. I certainly wish I could be. However, I must be in Philadelphia that weekend, and there just isn't a chance of my getting to Boston. Remember me to all the gang." Wally Pike writes from La-Fonda, Santa Fe, New Mexico: "Sorry I can't make the dinner. Expect to be up in the Indian Country in southern Colorado on that date. Give my regards to the gang and tell them it won't happen again!"

News from Classmates: Evers Burtner writes from the Department of Naval Architecture at M.I.T.: "Toward the end of last March I was given a six weeks leave of absence from my department at Tech. Changes in contents of my courses made such a leave feasible, especially since I have been on duty all summer as acting department head. During this period, quite extensive repairs were made. The six weeks, together with the mid-term vacation week, Mary and I used to drive to San Rafael near San Francisco, via Richmond, Mobile, New Orleans, San Antonio and San Diego. This enabled me to visit a dozen ship and repair yards, most of which were new to me. Also saw some two dozen graduates of Course XIII, including Bob Sherman. In fact, about a dozen of these kindly gave me a dinner in San Francisco. Our return trip was early in May. Until we reached Fitchburg we had used our windshield wiper less than 10 minutes. It rained only one night in San Rafael. However, at other seasons of the year this dry weather is compensated for. It hardly seems possible that next June will be our Fortieth Reunion. I'm looking forward to seeing all the boys."

Leo Miller wrote to Frank Scully from Miller-Harris Instrument Company, 601 East Ogden Avenue, Milwaukee, Wis.: "Thanks so much for your letter which arrived a day or so after my arrival home from a seige in the hospital: a return engagement of a previous sojourn in late April, a combination of hypertension and a ticklish ticker was the difficulty and I am still at home, following doctor's instructions. Believe me, Frank, your letter was a most pleasant surprise and a heart-warming gesture on your part. Your ref-

erence to our Fortieth Reunion is a harsh reminder that these forty years comprise more than half our "expected span," actually representing 6/7ths of our effective longevity. I was stricken with an acute attack of arthritis in April 1951 but thanks to ACTH and cortisone I've recovered with no after-effects. After three days back in the office I returned to the hospital and am now progressing to the stage where I am walking a half mile each day in a slow, deliberate manner. I can appreciate that it would be foolhardy for me to make plans for the Reunion. Meantime, Frank, please give my regards to Hank Marion, Boots Malone, Clive Lacy, Jerry Coldwell, or any other Course VI men I knew so well. This turns out to be more of a communique than a letter but I have plenty of time on my hands and am able to indulge in such unusual privilege. My kindest regards to you." All our best to Leo for a complete and speedy recovery with full return to business.

Another letter earlier from Ben Neal resurrecting Burnham Field: "Max wrote me awhile back about a contribution to the Alumni Fund, and took the opportunity to have me go after three or four more guys. Among them was Burnham Field at Niagara Falls, whom I have never been close to, although back in the old days in the Lab, he was 'one of the (Course X) gang.' I called Burnham on the phone, and in the course of that conversation he told me about an open house proposition that he was going to have, and on my return from Cleveland yesterday, I had a confirming letter, original of which I am enclosing herewith, as I thought it might be of passing interest to you. I plan to attend, and believe it would be interesting. My regards to you and Fran."

The University Club *News* from Akron, Ohio, reaches us regularly and reflects Parry Keller's literary and reportorial proclivities. One bit read: "Parry Keller recently returned from a vacation in Massachusetts. While there he attended at M.I.T. in Cambridge, President James R. Killian's annual dinner and meeting for Honorary Secretaries, members of the Educational Council and officers of alumni clubs."

Just after our pleasant visit with Parry here, he wrote: "I have been busy with my work since I returned to Akron and regret that I do not have any interesting news for you. Have seen Herman Morse a few times and he was pleased to get your greetings. My son and his wife purchased a home in Cleveland Heights about a month ago and are gradually getting settled. Every time I visit them I am put to work or am drafted as a baby sitter. I seem to like all this. Have two more weeks of vacation coming up in October — no definite plans. Be sure and get in touch with me whenever you come this way."

Congratulations to Ellis Tisdale: "The Interstate Commission on the Potomac River Basin announced today the appointment of Ellis S. Tisdale, regional Public Health Service engineer at Atlanta, Georgia, as the new commission director. Mr. Tisdale has wide experience in abatement work. He helped prepare the legislation that became the National Pollution

Control Act. He served as chairman of the Ohio River Board of Sanitary Engineers, and took an active part in the establishment of the Ohio River Compact, an organization similar to the Potomac River Commission. During World War II, Mr. Tisdale was head of a training program for health officers conducted at the Bethesda Institute of Health. Before that he had been in charge of the Works Progress Administration's mine sealing program. Under his direction, abandoned coal mines were sealed in an effort to reduce pollution from acid mine drainage."

We hope Forrest Purinton won this election in his town of Middlebury, Conn. All our best to him. It is nice to read such a glowing account of his achievements and activities: "The GOP town committee announced its indorsement of Forrest G. Purinton for the post of first selectman. The town committee gave the following information on Purinton in its announcement. At a Town Committee meeting on Thursday, August 26, 1954, he was the choice of the Town Committee by a wide margin. Mr. Purinton has been a resident of Middlebury for several years. He served as a captain in the Ordnance Department of the U. S. Army during World War I in the United States and France. After serving his country, he went to work for the Oakville Pin Company and later transferred to the Patent Button Company, where he served 35 years until his recent retirement. In the Patent Button Company, Mr. Purinton served in various capacities, such as mechanical engineer, superintendent, director of research and development, and as a director of this company. He has had wide experience in organizing people and administering their responsibilities. He has long been a member of the Appalachian Mountain Club and chairman of the Connecticut Chapter for several years. In his later years, he was chairman of the Board of Directors of this camp at Lake Winnepesaukee. He is a charter member of the University Club of Waterbury, a member of the Rotary Club, Waterbury, and a member of the American Society of Mechanical Engineers. He has two sons, John and Charles, and five grandchildren who live on Bayberry Road, Middlebury, and another son in New York City."

Support the Alumni Fund. Send that extra big check to Max. This is really all the class notes material I have, so for next month — help! help! — AZEL W. MACK, Secretary, 40 St. Paul Street, Brookline 46, Mass.

• 1916 •

We would like to begin our notes this month with this interesting item from Allan Pattee, who continues as vice-president of General Cable Corporation in Perth Amboy, N.J. He says: "Uppermost in my mind naturally is the recent arrival of my second grandchild (male), presented as an M.I.T. prospect by my daughter, Barbara Kovar. When and if my two boys get married, the rate per grandfather could rise, which would perhaps give me a better competitive standing in the Class. I must be placed well back of the leaders. My work with General Cable has changed to the extent that

it is now wholly a staff job and not limited to inspection and quality control. Broadly it coordinates the problems of quality, scrap, and material usage control, and manufacturing standards, all of which are meat for the statistical grinder; and it is interesting to note that identifiable dollars are being saved in significant volume. Some of it is, I am sure, traceable to the good advice provided by Harold Dodge on several occasions." Thanks very much, Allan, and apropos of your reference to our Assistant Secretary, we have this item which appeared in the July, 1954, issue of the American Society for Testing Materials Bulletin: "The 28th Marburg Lecture was presented by Harold F. Dodge, Quality Results Engineer and Member of the Technical Staff, Bell Telephone Laboratories, Inc., New York, N.Y. This lecture, given each year at the annual meeting, originated as a memorial to the first Secretary of the Society and was established to emphasize the importance of furthering knowledge of properties and tests of engineering materials. Mr. Dodge discussed the role played by sampling and quality control techniques. He gave particular attention to the application of some of the simpler statistical methods used in the interpretation of data obtained in development, production, and inspection activities. In industry the development and production of materials and manufactured products involves at every turn the collection, analysis and interpretation of quantitative data. Most engineering data can advantageously be regarded as a sample to tell something about a larger whole or about the behavior of the cause system or process that gave rise to the data. Long recognized as a pioneer in the field of quality control, Mr. Dodge received his degrees from M.I.T. and Columbia University. He is Chairman of A.S.T.M. Committee E-11 on Quality Control of Materials and received the Award of Merit in 1950 for outstanding service rendered to the A.S.T.M. He was selected as the Shewhart Medalist in 1949 by the American Society for Quality Control. In addition to the Marburg Lecture he has written many scientific papers dealing with statistical methods and inspection data as applied to quality control."

Both Chuck Loomis and Jack Burbank were right on the job for us recently when they sent us copies of a clipping announcing Charlie McCarthy's move from Connecticut and United Aircraft to Texas and Chance Vought Aircraft. Thanks very much, fellows. Here in part is the item: "Charles J. McCarthy, aviation industry designer, engineer and executive since World War I, has been elected chairman of the board of Chance Vought Aircraft, Inc., effective July 1. The election of Mr. McCarthy, presently a vice-president of United Aircraft Corporation and at one time general manager of the former Chance Vought Aircraft division of U.A.C., was announced following a meeting of the C.V.A. board in Dallas, Texas. He will resign as an official of United Aircraft. On July 1, Chance Vought will become a completely independent manufacturer of aircraft and guided missiles, with an independent board of directors and no fur-

ther corporate connection with United Aircraft. This last formal step in a separation plan announced by U.A.C. last December will end an association dating back to 1929, when Chance Vought Corporation joined with other aeronautical organizations in creating the United Aircraft and Transport Corporation from which United Aircraft was formed. Since January 1, Chance Vought has been operating as a wholly-owned subsidiary rather than a division of United Aircraft pending formal separation July 1." Congratulations, Charlie. Hope you like Texas and good luck in your new responsibility.

Best wishes are also in order for Willard Crandall who recently changed his position as indicated in a news clipping from which we quote in part: "Willard R. Crandall has been named chemist in the Product Development Department of Foster D. Snell, Inc., one of the largest consultant engineering firms in the East. Crandall has been a research engineer in oil, foods and chemicals since his graduation from M.I.T. in 1916. With Foster D. Snell, Inc., of 29 West 15th Street, Mr. Crandall will supervise a research and development program in polymer emulsion paints. As chief chemist for M. Ewing Fox Company, Inc., for 25 years, he directed all of their technical work. He is a member of the American Chemical Association for the Advancement of Science, and the New York Paint and Varnish and Production Club."

Here is a partial summary of a recent talk given by our classmate Vannevar Bush: "Dr. Vannevar Bush, President, Carnegie Institution of Washington, in an address before the board of directors of Stanford Research Institute, expressed optimism about the future despite some misgivings of an atomic war. If that came about, it would not end civilization but it would set the clock back and might transfer to the Orient the center of what would be regarded as advanced civilization. Our main reliance for preventing war must reside for some time to come on our ability to strike such a devastating blow that no enemy would dare attack. We are, however, nearly wide open to aerial attack. This does not make sense and the situation must be rapidly and well corrected. If atomic war does not come then, according to the speaker, the future may be bright indeed. We have just begun to reap the benefits of vigorous research and development; we have just scratched the surface of what may be accomplished when science is applied in an economic manner for the preservation of the health and the satisfaction of the needs of men. He outlined some of the developments to be expected in the World of Tomorrow as the fruits of scientific research. They would include new metals and a wide variety of materials. There is going to be greater mechanization of industry. Great refineries, with central control are already automatic factories. Other industries will follow this lead as the startling progress in electronics in all phases gives us the means to do so. . . ."

Not so long ago we commented on an idea for Christmas giving which was being promoted by Steve Brophy's advertising firm. You may be interested in this

news clipping which recently appeared and tells more about this plan: "Some years ago, Kenyon and Eckhardt, Inc., New York advertising agency, began to feel that the entire idea of Christmas giving by business firms was getting out of hand in terms of meaning. They approached interested clients with the foster parents idea (which takes care of war children in foreign countries) and the foster family now taken care of by Kenyon and Eckhardt clients has grown to six. Sponsoring clients last year included Ansul Chemical Company, Lincoln-Mercury Dealers and Mennen Company, and letters about the plan have gone out to editors and commentators on the agency's Christmas lists, along with Christmas greetings. The agency reports that many on the list wrote back, saying that knowing a child would be cared for in their name was the nicest Christmas gift they had received."

Our compliments to Nat Warshaw for his very fine article on the need for standardization in materials handling equipment. Nat is one of the pioneers in the field of materials handling and his article has appeared in many of the major magazines catering to industry. Our congratulations to Dick Hunneman for all the free publicity he received by writing to the editor of the Boston *Herald* not so long ago on the subject which is described in this brief passage taken from the *Herald*: "A lively controversy has been precipitated among letter writing motorists by a letter to the editor of the *Herald* signed by J. R. Hunneman of Woburn. He complained that when he drives at the legal 55-mile speed limit in the 'fast (left-hand) lane' on Route 128, motorists come up behind and blow their horns. He asked what he is supposed to do." The headline which caught our attention on this matter had this to say, "Letter-writing Rte. 128 driver wins the sympathy of no one." Dick's initial letter started a controversy which was given good coverage in the *Herald* for the good part of two weeks. Our thanks to Phil Baker for sending us copies of some of the pictures which he took at the class cocktail party at the Statler Hotel in Boston in June.

Your Secretary recently attended the American Mining Congress convention held in San Francisco and while in that neck of the woods had an opportunity to talk with Chick Wallace and was pleased to learn that he plans to retire during the next year and said he was planning to come to the reunion in '56. Tried to reach Jack Heller on the phone but was not successful. Met and talked with Dick Fellows, who is looking very well, at various sessions of the convention. Your Secretary is also very pleased to report that he was very pleasantly surprised in mid-September by a visit to his plant by Arvin Page. Arvin arrived bright and early in the day and was able to stay for four or five hours. He looked wonderful and is looking forward to being with the gang in 1956 at the reunion. We received word that Ralph Mills has retired from his position with Bell Telephone Labs. and we wish him well in his new way of life. We were also pleased to learn that Ed Weissbach was ordained to the Sacred Order of Deacons on October 16 in Grace

Church in Merchantville, N.J. Our sincere congratulations to you, Ed.

We come now to the part of our notes which fills us with sorrow. We regret to report the following deaths: Ray Lindgren (April '53), Horace Hall (Oct. '53), Gotthold Meinzer (Feb. '54), Arthur C. Reyeroft (Aug. '54), Lyman Quincy (Aug. '54), William Hamilton (July '54), and Emery Carter (July '54). Our heartfelt sympathy goes out to the loved ones of each of the departed. —RALPH A. FLETCHER, *Secretary*, P.O. Box 71, West Chelmsford, Mass. HAROLD F. DODGE, *Assistant Secretary*, Bell Telephone Laboratories, 463 West Street, New York, N.Y.

• 1917 •

As these notes are being written (shortly after the conclusion of the World Series) pinch hitters have an unusual amount of attention. Perhaps, therefore, your pinch-hitting reporter for this issue of *The Review* may stand a better chance of substituting for our most reliable, unfailingly cheerful, but getting balder all the time, Class Secretary Ray Stevens. Ray disappeared suddenly in mid-September without leaving any trace around the A. D. Little Office. Rumors gave conflicting stories: one said that he had gone to Europe on a very secret mission; another said that he had worked so hard that he needed a vacation. I tried to pump his secretary concerning his whereabouts, but no luck. Her only reply was that he would very much appreciate my writing something for the December Class Notes so now, on the last day before the deadline, here I am trying to turn out some news. Since Ray edits the usual notes there is almost never anything said about his activities. This gives me a chance to give you some inside dope. In the first place, let me assure you that whenever you read about the activities of Arthur D. Little in *Business Week*, *Fortune*, or in the daily press, you may be sure that Ray is directing the effort. When the new apartments were built on Memorial Drive Ray moved in from the suburbs to a very pleasant suite of rooms overlooking the Charles River, which gives him the opportunity of falling out of bed in the morning and just about landing in his corner office a short distance away. I presume he uses this extra store of energy to play another 18 holes of golf on week-ends. You can be assured that your regular Class Secretary is as full of zip and energy as ever.

Wandering around Memorial Drive and the Faculty Club at M.I.T. one is almost sure to bump into Lobby and Penn Brooks. Lobby, now that he has taken unto himself a wife, is beginning to take advantage of his right to delegate responsibilities for travel to Don Severance and other Alumni staff officers. Whenever you miss Lobby from one of his usual visits you can picture him sitting by the fire-side with the Mrs. I am wondering whether Penn Brooks ever wishes he were back at Sears, Roebuck? The job of putting M.I.T.'s School of Industrial Management on the map, with the handicaps of trying to get a top-flight teaching staff for the money that the Institute can afford to pay, is a real job. The way Penn gets around making speeches, besides or-

ganizing the School's activities and running his farm down in Virginia, will let you all know that he is keeping plenty busy.

Stan Dunning, Class President, lunched with Ray and me a couple of weeks ago and announced that Dick Loengard had very graciously taken over the task of boosting and building the 50-year class gift to the Institute. (Cheer up, it's still about 13 years off.) If anyone has hit the stock market for a killing or brought in an oil well, or something similar, keep Dick and the class fund in mind.

Getting down to the New York area, who should we bump into but Joe Littlefield and Enos Curtin. The occasion was the New York Club's beer night at the Ruppert Brewery in Upper Manhattan. By the time that about a dozen glasses of beer had been consumed (by five people) we had heard a most interesting account of Enos Curtin's recent trip around the world visiting bankers, diplomats, and other V.I.P.'s. When you see him, get him to relate his experience in waiting for an interview with President Syngman Rhee of Korea. Enos thought one of the formally dressed guards was the President and wasted a lot of words on him before he realized his mistake. Joe Littlefield and I happen to be busy on New York Club committees trying to help spend a Cambridge subsidy designed to promote Alumni activities in the New York area by getting a paid secretary for the New York Club along with more suitable New York Club headquarters. If the effort proves successful, it may be tried elsewhere. My final note is about Dix Proctor who, now that he has cornered the machine tool business in the New England-New York area, takes a month or six weeks cruise each winter. This year he is off for a cruise somewhere in the Bahamas or thereabouts.

Now just a personal word in closing — whenever you get sick of working become a consultant; it's great fun going around telling people how to run their businesses. By the way, how about a prize at the next five-year reunion to the classmate who can certify to the most grandchildren? — WINFIELD I. McNEILL, *Special Correspondent*, 270 Park Avenue, New York, N.Y.

• 1918 •

The autumn leaves, blushing slightly from the kiss of the frost, are falling as this is being written from two clippings which have dropped unblushingly upon my desk from the envelope of *The Review's* editor. The first is an ambitious three-column piece from the Portland, Maine, *Express* with a Harrison date line. Its intimations and reports concerning our own inimitable Van Zelm begin with as delightful a sentence as ever got into newsprint: "When the Canterbury bells tolled, all the little gnomes in the meadow came a-running." In this hurried world, Van has established himself far from the rush of city traffic, in a place where his imaginative mind has made him an international authority on gnomes, elves, gremlins, and other little creatures of the dell. He knows so many of them that he lives in a fifty-room hotel atop an 883-foot elevation called Summit Spring

Hill. You who read the *Christian Science Monitor* see his daily cartoon strip about the "Vangnomes." The fan mail comes from as far away as Japan and Australia to which "Skipper," the world's only mariner gnome, must surely have sailed at one time or another despite the limitations of an aspen leaf boat on a frog pond. Then there's "Mrs. Darning Needle," who mends broken hearts. We have a lovely dining table mat Van has drawn using many of his characters. They also appear on pottery ware made in California. So look for "Prunella Porcupine," and the fairy queen who says, "Wherever you go your shadow falls on others and they are either better or worse for your presence."

The other clipping has to do with the fact that your Scribe cast a shadow at the Crawford House meeting of the presidents of the New Hampshire Women's Clubs. Actually that is only a small part of the places where his shadow has been seen in the last month. There was the fall meeting of the American Pulp and Paper Mill Superintendents at Poland Springs, Maine; the Kiwanis Convention in Salina, Kansas; the Holyoke Industrial Association meeting in the city of the same name; as well as engagements in Beverly, Mass.; Bridgeport, Conn., and Allentown, Pa. We don't usually get so far so fast. Paralleling Van Zelm, we enjoy the quiet of our own woods, the top of Mt. Monadnock across the pond from our front porch, the beaver dam just up the road, the fox who walks the path by the kitchen window, and the venison in our deep freeze. Oh, yes, and when the curtain in the bathroom is pulled down we know we've had a guest! — F. ALEXANDER MAGOUN, *Secretary*, Jaffrey, N.H.

• 1919 •

It hardly seems but a month or so ago that we had our wonderful 35th Reunion in New Hampshire. The photographs went out and everybody seems pleased to have them as a reminder of how young and spry we still are with our rounds of golf and square dancing. News comes in from the boys and it won't be long before we will get together again for our 40th. Our Class should respond to the Alumni Fund contributions this year in memory of Karl Compton, who has done so much for the Institute. Best wishes for the Holidays!

Duke Herzog returned to Illinois from the Reunion via the Mohawk Trail to Williamstown, left Route 20 in New York State slightly west of Lima and headed down through Pennsylvania to Warren City and then into Ohio. Says if we have never driven over that section, we should, for it is beautiful. He and Dorothy say they had a really grand time at the Reunion and hope they can be there when the 40th rolls around. In September a letter came from Ev Doten with news that George McCarten was improving steadily, was to leave the hospital in a few days, and Ev expected to see him sometime in October. We are all looking forward to George's complete recovery. Congratulations to Harold Marshall, now a colonel in the Air Force Reserve. Duty with that Service coming the same time as our Reunion prevented his carrying out his plans for attending. Since he came out of the

Army in World War I, Don McKechnie has been superintendent of the New Jersey Zinc Company's Franklin, N.J., plant, one of the richest zinc mines in the world. But now the mine has played out, the plant is shut down, and Don will probably go to the Ogdensburg plant of the company. He has been a member of the City Council of Franklin. On a recent trip your Secretary spent some time with Lloyd Sorenson, had a round of golf with him. He showed us around the shipyards where he is production manager of the Newport News Shipbuilding and Dry Dock Company. Alan McIntosh is now with The Imperial Electric Company at Akron—home address 539 Highland Avenue, Wadsworth, Ohio. He reports that he and his wife certainly enjoyed the Reunion and look forward to many more.

From Ray Bartlett: "After 15 years in consulting engineering work which required constant traveling all over the U.S.A. I have finally settled down. Effective September 15 I am director of management engineering at The Stanley Works, New Britain, Conn. Now comes the problem of selling my home, moving to Connecticut and all that. The change in employment is in line with doctor's orders—'Slow down, or else.' Wonderful time at Wentworth-by-the-Sea. Will be looking for the next one in five years." Will Langille has been elected president of the Diehl Mfg. Company, electrical subsidiary of the Singer Manufacturing Company. Will joined Singer in 1920 as manager of its plant at St. John's, Quebec. In 1926 he became a member of the company's executive staff in New York City, in 1933 was made works manager of Diehl and in 1940 was elected vice-president of that company. Our hearty congratulations, Will!

Word has just reached us of the passing of two of our members: Harris Kennedy of Wellesley Hills, Mass., in September 1951, and W. Barrington Miller of Burgess, S.C., in February of last year. We extend to their families our deepest sympathy.

Bernard Coleman was best man at his son Kenneth's wedding in October to an Orlando, Florida, girl, a music major at the University of Florida. Having composed a wedding waltz for his son Roger's bride three years ago, he had to do one for Ken's bride also. He says he is not a Romberg or a Friml but does have fun tinkering at composing. Bernard had hoped that one of his sons would be a M.I.T. man but his wishes went unheeded. He will try again with his grandson, now about a year old. Bernard is very busy, for in addition to his two sanitariums he has many civic responsibilities especially in the fields of health and welfare. Recently he became a member of the General Budget Committee of the Los Angeles Community Chest and chairman of one of the subcommittees. When Ken returns from his honeymoon, he will take over the administration of the Paradise Sanitarium. Bernard reports that he and his wife have had about enough traveling this year—to Honolulu, a wonderful trip through British Columbia, Boston, and Florida. Now they have agreed to go into training as baby sitters and will stay home for a while.

Ben Bristol went to England for a couple of weeks this fall. He reports from Foxboro, Mass., that hurricane Carol left them in the "expected condition, but we can't complain too much." Charlie Chayne and wife made a trip through Wisconsin last summer driving an old Simplex. "There were times," he says, "when we wished Simplex manufacturers had thought about today's hardtop. Practically every time we opened our mouths a bee flew in. There was no top and only a narrow windshield to protect us from the insects and dust." Charlie's very fine collection of antique cars includes, among others, a large Bugattis (only seven were made), a Hispano-Suiza and a Rockwell taxi. He personally restores these cars and every one runs perfectly. With up-to-date models he surprises his friends by frequently driving to work in a competitor's car "to keep tab on the opposition."

At this writing your Secretary is about to take off for a little vacation trip, first to visit his son at Cornell over the weekend and then to spend several days in the Poconos.

New addresses: Albert Kaufman, 48 Bridge Street, Route 2, Tewksbury, Mass.; Leon Snow, 10 Goldthwait Road, Marblehead, Mass.; Ralph Tribou, R.F.D., Cohasset, Mass.; Bill Bennett, Cedar Point Drive, Pocasset, Mass.; Ark Richards, 51 Caroline Park, Waban 68, Mass.; Ernest Schindler, R.F.D. No. 1, South Acton, Mass.; Robert Montgomery, 120 Third Street, Niagara Falls, N.Y.; Henry de Bonneval, 43 Fifth Avenue, New York 3, N.Y.; Don Way, 745 Highland Avenue, Westfield, N.J.; John Comstock, Gloucester Point, Va.; Colonel Annan Cook, 31182 Monterey Road, South Laguna, Calif. Louis A. Brown is general manager of Adrian Wilson and Associates, Architects-Engineers, in Los Angeles. His company has a great deal of work in Japan and in Southern California. His new home address is 545 S. Figueroa, Los Angeles 17, Calif.—EUGENE R. SMOLEY, Secretary, The Lummus Company, 385 Madison Avenue, New York, N.Y.

• 1920 •

It is a pleasure to report that two of our distinguished classmates have been nominated by the Alumni Association as alumni members of the M.I.T. Corporation Visiting Committees: George Burt and Herb Fales, both for the Department of Mechanical Engineering. Other distinguished classmates whose activities continue to be prominent in the public eye are Lauren Hitchcock who is president and managing director of the Southern California Air Pollution Foundation, Irwin Moore, President of the N.E. Electric System, and Ed Burdell, President of the Cooper Union. Moore was the subject of a feature story in the *Boston Post* earlier this year. He has become an eloquent spokesman for N.E. industrial development. One of his pet projects is the Massachusetts Development Corporation. He is chairman of the seven-man steering committee which set up the Corporation. He says he is a better bridge player than golfer but "manages to break 100 on one of those easy summer courses." Ed Burdell was awarded an LL.D. degree at Ohio State University last June. The cita-

tion says, "For 30 years he has served the cause of higher education as teacher, dean and president but his service has never been limited to the narrow confines of any campus. Always interested in the immediate employment of learning for civic betterment, he has been a recognized leader in the newer developments of housing, zoning and planning. In education he has been a strong and successful advocate of that proper balance between technology and the humanities which results in young men and women of competence, wisdom and responsibility. Ed, as you will remember, was the first Dean of the Division of Humanities at M.I.T."

It is with sorrow that I must report the death of Samuel Milliken late this summer at Bar Harbor, Me. He was a major in the U.S. Marine Corps, Retired. During World War II he was second in command at the Portsmouth Naval Prison and later transferred to Squantum Naval Air Service where he was commanding officer of the Marine Barracks. He is survived by his widow and one son. The death of another classmate last summer that must be sorrowfully reported is that of William K. Lord who was with the Maryland Casualty Company in Baltimore.

John Garrett has left Alabama and is now in Roxbury, Mass., address 71 Highland Street. Ken Akers is still living in Needham but has a new address there, 47 Donna Road. Charles Moore is now in Fullerton, Calif. Ted Sullivan has moved from Montclair, N.J., to Ridgeway, Pa. Merritt Taylor has moved from Upper Darby, Pa. to Bryn Mawr. Robert Aborn is with the U.S. Steel Corporation, Kearny, N.J. Ed Bigelow is in Portland, Me., address 131 Chadwick Street. Paul Bigler is in New York City, address 784 Park Avenue. Roger Colton has left New York and is in Alexandria, Va. Paul Corvin has moved from Verna, N.J., to Melrose, Mass. Fred Crapo is in Muncie, Ind. Ed Cruise is with the Boston Woven Hose and Rubber Company, Cambridge. Myron Davy is in Alexandria, Va., address 44 Greenway Road. Jim Dean is in Andover, Mass., address 8 Kensington Street. Jim Johnson is with the Cherokee Brick Company, Raleigh, N.C. Claude Kell has left West Virginia and is in Hinsdale, Ill., address 19 Center Street. Don Kimball who is an executive at Eastman Kodak Company is living at 111 Old Mill Road, Rochester, N.Y. Myron Lee heads the M. H. Lee Engineering and Construction Company, Riverhead, N.Y. Joe Mahan is with the National Supply Company, Pittsburgh. Art Merriman may be reached at 2265 Chatfield Street, Cleveland Heights. Fraser Moffat is with the American Cyanamid Company, New York City. Ed Rich is now in Wellfleet, Mass. Brigadier General Roland W. Case is at 2737 Devonshire Place, Washington, D.C.

I have already made mention of M. S. Sanders of Wytheville, Va., in last month's notes but I cannot refrain from quoting the last paragraph of his letter just received. He says, "It was nice to hear from you with all the correspondence you have to do for the Class and I assure you that those less active members like myself appreciate and read the Class Notes." I must admit I have considerable doubts about this but it is heartening to get an occa-

sional comment such as this. — HAROLD BUGBEE, *Secretary*, 7 Dartmouth Street, Winchester, Mass.

• 1921 •

The news that Technology will proceed with the construction of the Karl Taylor Compton Laboratories of Nuclear Science and Electronics and that the entire 1955 Alumni Fund will be exclusively devoted to this memorial, comes as a fitting tribute to our beloved leader. To be built north of the new **Dorrance** Laboratory for Biology and Food Technology and at the east end of the Institute's group of main educational buildings, the project requires three million dollars for the building, a like sum for maintaining a vigorous and effective program, and an additional million for a nuclear reactor to study the beneficial uses of atomic energy. Every member of the Class is urged to increase this year's giving so that the Karl T. Compton Memorial will soon start producing a steady stream of outstanding men and worthwhile ideas as a continuous living monument to the man who constantly sought to develop in others the superior human and technological qualities which carried him to the front rank of the world's scientists.

By now it is history that the M.I.T. Championship 150-pound crew won the old British Regatta Trophy, the Thames Challenge Cup, last July at Henley-on-Thames, England, by defeating a British Royal Navy crew in the finals of competition of some 32 crews. The M.I.T. crew was invited to row in the Royal Henley Regatta after it had defeated Pennsylvania, Yale, Princeton, Harvard, Navy, Dartmouth, Cornell and Columbia earlier in the year to win the Joseph A. Wright Trophy. Irv Jakobson was a member of the alumni group which formed the M.I.T. Henley Regatta Committee to arrange the successful foray into competition abroad. We are glad to have the Institute's official words of thanks, via Committee Secretary Ralph Jope²⁸, for our Class contribution towards the expenses of the trip and we feel sure that the individual members of the Class of 1921 who also contributed must be well satisfied with the final report which they received.

Merritt F. Farren has been elected president and director of the Sturbridge Corporation, which will manage the commercial activities of Old Sturbridge Village, Mass., leaving the Village staff free to expand the museum facilities for the increasing number of visitors. Merritt has been business manager of the Village since 1952. He had previously operated his own architectural office in New York and was also active in management work with John Wanamaker and with Dorothy Draper. He is secretary and treasurer of the Commission on Architecture and Allied Arts of the Protestant Episcopal Church in the United States and a vestryman of Holy Trinity Church in Southbridge, Mass. Philip H. Hatch, former consultant to the Long Island Railroad, has been appointed general mechanical superintendent of the road, with headquarters at the Morris Park Shops, 91-53 121st Street, Richmond Hill 18, N.Y. Phil has a distinguished railroad career, dating

back to student engineer days at General Electric following our graduation, then with the Cleveland Union Terminal and the New Haven, in which he rose rapidly to become general mechanical superintendent. From 1951 until his recent appointment, he was with the Locomotive and Car Equipment Department of General Electric, Erie, Pa.

Leland H. Hewitt, retired colonel, Corps of Engineers, has been appointed by President Eisenhower as the American member of the international boundary and water commission in El Paso, Texas, to maintain contact with Mexico on flood control and irrigation projects, chiefly along the Rio Grande, and to administer the 1944 water treaty. A West Pointer who was graduated with us in Course II, he has been district engineer at Galveston, Washington, Seattle and Boston. During World War II, he commanded air field construction on various Pacific islands. He was wounded in combat and holds the Purple Heart, Silver Star and the Legion of Merit decorations. Merle H. Davis, a retired brigadier general, is a consultant to the Chamberlain Corporation, Waterloo, Iowa, and secretary of the bomb committee of the American Ordnance Association, which recently held a convention of manufacturers and armed forces representatives. A graduate of Vermont who was associated with us in Course X, General Davis saw overseas duty in World War I and then served in the Ordnance Corps, becoming chief of the ammunition division. He holds the Bronze Star and the Legion of Merit with three clusters.

George W. Spaulding is a member of the management committee of the American Institute of Electrical Engineers. Philip H. Hatch serves on its board of examiners, as a member of the committee on general applications and as chairman of the committee on land transportation, of which Douglas M. Burckett is also a member. Arthur R. Gatewood is a member of the committee on marine transportation, covering wires and cables, distribution, communication and alarms, and is chairman of the section on international standardization. Your Secretary serves with the electronic semi-conductor devices group and the joint AIEE-IRE subcommittee on semi-conductor devices. Edward P. Wylde of Williamstown, Mass., is referred to as the "mathematical genius who went to M.I.T." in a series of reminiscences by M. C. Knights, published in the North Adams, Mass., *Transcript*. Ed owns and operates the Harbor Machine Company, Adams, Mass.

Raymond A. St. Laurent, our Class President, reports recent meetings with A. Warren Norton and William H. Rose. Ray and your Secretary both received notes from Helier and Graciela Rodriguez during their tour of Europe. Ray says that uninvited guests Carol and Edna wrought havoc at his Vinalhaven, Maine, summer home but the damage was limited to the many fallen trees. In a letter to Ray, Richmond S. Clark tells of the wedding of his son, Richmond, Jr., and Royanne Kelley, reported in last month's notes. The young couple reside in Austin, Texas, where Sandy has returned to the University of Texas, following three years in

service, to get his degree next June. His bride is a graduate of Stephens College and attended the University of Hawaii. Rich heads the Coordination Division of the Humble Oil and Refining Company, Baytown, Texas, and is responsible for planning and scheduling of operations, to correlate customer needs with available raw materials, refining facilities and shipping requirements.

Rogers Corporation, makers of fibrous and plastic materials which are called "fiberloys," had a big celebration on the occasion of the renaming of the town and post office at one of their manufacturing locations. Now known as Rogers, Connecticut, the christening date was marked by the issuance of philatelic "first day covers," postmarked with the new name. A pamphlet, "Welcome to Rogers," is designed to help the visitor to either the Rogers or Manchester, Conn., plants. It lists among the key people Saul M. Silverstein as president and director and Raymond A. St. Laurent as vice-president in charge of sales. Rogers received favorable comment in the *Wall Street Journal* for its effective monthly open labor-management meetings, conducted somewhat on a town meeting basis. Saul is still on his trip to Turkey as these notes are being prepared and reports that he and Rigi were delighted to run into Helier and Graciela Rodriguez in Rome. The two couples traveled to Florence for sightseeing. Another series of interesting "Rogers Reporter" articles are being written by Saul and will be reviewed here when they are complete.

Sumner Hayward, Joe Wenick and your Secretary enjoyed the fall meeting of the M.I.T. Club of Northern New Jersey at which Clarke Williams²⁴ of the Brookhaven National Laboratory gave an excellent address on industrial applications of atomic energy. Joe is treasurer of the Club and Sumner heads the local M.I.T. Educational Council group. The Dean's List published by the Institute for the spring term of 1954 lists the name of Peter C. Card⁵⁷, son of Tom and Mrs. Card of Fairhaven, Mass. Dugald C. Jackson, Jr., writes that his new home address is Tetrastemma, Darlington Road, RFD 1, Havre de Grace, Md.

It is with profound sorrow that we record the death of Harold Edward Smyser on January 28, 1954. A graduate of the U.S. Military Academy, he was associated with us in Course XIII. His entire career was spent in the Army, in which he was a colonel of Infantry. He was awarded the decoration of the Legion of Merit. On behalf of the Class, sincere sympathy is extended to his family and friends.

Daniel C. Barnard, 4th, is living at the Sheraton Park Hotel, Washington 8, D.C. Warren H. Brimblecom has moved from Newton, Mass., to 7 Southwick Circle, Wellesley Hills, Mass. Robert S. Cook now lives at 633 Royal Plaza, Fort Lauderdale, Fla. William B. Dudley owns and operates the Bentonville Cash Store, P.O. Box 267, Bentonville, Ark. Zambry P. Giddens gives his business address as Kirby Building, Dallas, Texas. C. Doane Greene has moved from New Rochelle, N.Y., to Decoy Farm, Rock Hall, Md.

Ernest Henderson and Robert L. Moore

give their business address as 470 Atlantic Avenue, Boston, Mass., the headquarters of the Sheraton Corporation of America. William B. Plummer can be reached at 910 South Michigan Avenue, Chicago 80, Ill. Ralph H. Price has left Texas City and now lives at 4303 Caduceus Avenue, Galveston, Texas. Laurence B. Richardson, formerly in Washington, D.C., is now at 860 Club Road, Hagerstown, Md. Brigadier General Don G. Shingler gives his home address as P.O. Box 61, Lexington, S.C. Harold F. Stose resides at 53 Greenough Street, Brookline 46, Mass. Herbert V. Thaden's home address is 601 Camilla Avenue, Roanoke, Va.

Addresses have also been received for Adolph H. Aronson, Colonel Charles F. Baish, Charles V. Briggs, Philip T. Coffin, Dr. Stewart P. Coleman, Commander Robert B. P. Crawford, Alfred H. Fletcher, John R. Hardin, Mark L. Ireland, Miss Nellie Jefferson, James LeGrand, Gordon M. Leland, Charles W. Maloney, Hugh E. McKinstry, Willard M. Mobley, Thomas F. Murphy, Alan Osbourne, Max B. Pearlstein, George F. Pieper, Jr., Herman H. Pohl, Colonel William C. Ready, John T. Rule, Edson I. Schock, Arthur L. Silver, John J. Stanton, Leonce Vaughan, Jr., and Captain William C. Wade.

Best wishes to you and yours for a very Merry Christmas and a most Happy New Year. — CAROLE A. CLARKE, *Secretary*, Federal Telephone and Radio Company, 100 Kingsland Road, Clifton, N.J.

• 1923 •

"The Decline of the Monumental," as discussed by John Burchard, IV, was the subject of an editorial by Uncle Dudley in the Boston *Globe*, September 19. He suggests that the passing of the monumental form of architecture will be succeeded by home owners in suburbia who will develop a new type of architecture. John, you strike a responsive note. Congratulations. Julius A. Stratton, VI, spoke on "Plans and Speculations for 1956" before the Alumni Association Luncheon Club Meeting, November 18. Presently your Scribe is speculating on 1955 and I venture most of you readers are, too. How come Julius is so far ahead of us?

All of you have received notice that the entire 1955 Alumni Fund will be used for the Karl Taylor Compton Laboratories of Nuclear Science and Electronics, a living memorial to our great leader and friend. Let us do our part to help this worthy and needed enterprise.

It is more than a coincidence that the announcement of Alfred E. Perlman's, XV, appointment as president of the New York Central Railroad System came on his 17th wedding anniversary. The couple have three children, Constance 10, Michael Lewis 15, and Lee Alfred 15—all students at the schools and Sunday Schools in Denver. After leaving the Institute, Perlman went with the Northern Pacific Railroad until 1934 when he became consultant to the Railroad Division of the R.F.C. He joined the Rio Grande Railroad in 1936 as maintenance engineer. Two years ago he was named executive vice-president. Then, in 1950, he was called to Israel as special consultant

to the Ministry of Transport and Communications in the modernization of the new nation's railroad system. Upon becoming head of N.Y.C., his first major decision was to cut the president's salary by \$20,000. What a man!

Congratulations go to Herbert L. Hayden, II, upon becoming manager of the E. I. duPont Doyle works at Leominster, Mass. Herb moved up from mechanical superintendent of the Arlington, N.J., works. Orchids go to James C. Walton, X, new director and vice-president of production of the Bellofram Corporation at Waltham. Belloframs, you are informed, are long-stroke, deep-convulsion, constant-area diaphragms used to transmit or control power in fluid systems.

We note with regret the passing of William T. Roth, X, at Elkin, N.C., last May. No other details are presently available.

Three of our classmates, Eger V. Murphree, V, Harland C. Forbes, II, and Robert L. Hershey, X, have been honored by the Alumni Association as members of the M.I.T. Corporation Visiting Committee. Congratulations! Notes from the Alumni Office indicate many changes of addresses. How about you fellows writing your Secretary telling of the significance? Forget your modesty, your classmates like to know what is going on. — HOWARD F. RUSSELL, *Secretary*, Improved Risk Mutuals, 15 North Broadway, White Plains, N.Y. WENTWORTH T. HOWLAND, *Assistant Secretary*, 1771 Washington Street, Auburndale 66, Mass.

• 1924 •

Seems evident that everyone in New York reads the financial page. A veritable flood of clippings were forwarded by eagle-eyed classmates who noted the elevation of B. Alden Cushman to the high post of vice-president of the J. Henry Schroder Banking Corporation and the Schroder Trust Company. Abe has been with Schroder for 25 years and is in charge of the investment department. And while we're on the subject of V.P.'s, Robert W. Stewart has been given that post with The Singer Manufacturing Company. For some time Bob was in Scotland managing the Singer plant there. He came home last year as assistant vice-president, now goes up another notch. And still they come. Union Carbide has announced that Hartselle D. Kinsey has been made vice-president of its Carbide and Carbon Chemicals Company. He has been works manager, and for a couple of years in the 40's was plant manager at Oak Ridge when Carbide was bringing it into operation.

Now for that "Ludlum Head Chest Aide" headline we mentioned last time. The Ludlum Head, of course, is Ed Hanly, and there's nothing wrong with his chest, but from the Pittsburgh *Sun-Telegraph* clipping it's still a bit of a mystery. The story reads like this: "E. J. Hanly, president of (that line was upside down) the Allegheny Ludlum Steel Corporation, has been named an associate chairman of the 1954." That's all. The rest of the story is a biography of Ed, so you'll just have to fill in your own "1954 what?"

And the one about the British Bishop. He was Bishop Leo Parker "whose Ro-

man Catholic diocese in England is the largest and the poorest in the country." On a tour of the U.S., Bishop Parker stopped over in Newburyport to visit his nephew George. He must have found this country a bit confusing. On the road to New London he was stopped by poll-takers who wanted to know what he thought of the McCarthy-Army row. He confessed that he "couldn't understand it at all." The good Bishop was not alone.

The M.I.T. Calendar of Events for the week just arrived, and among the events listed is a Chemical Engineering Department Colloquium on "How a Manufacturer Looks at Nuclear Power for Central Stations." The speaker, David M. Schoenfeld, Manager, Nuclear Power Division, Combustion Engineering, Inc.

Retired on August 31 from the Army, Colonel George J. Reinhardt. This is mandatory for officers with 30 years service and five years in the grade of permanent colonel. Considering the amount of writing Scoops has been doing on all sorts of subjects, he should have no trouble filling his newly acquired spare-time. Another retirement, Paul C. Hedenstad, for many years superintendent of the Worcester (Mass.) Sewers Bureau. He requested it for reasons of health.

Alvan Fisher, Naval Reserve captain, has been named director of the Naval Reserve Officers' School in Boston. This is a new operation aimed at "modernizing" World War II officers who have been in mothballs. Fisher is manager of defense products at GE's Telechron Plant. From Nyack, N.Y., comes the news that Frank Manley is now assistant vice-president of the Rockland Light and Power Company.

Haven't heard from Chief Engineer Simonds since August, but at that time he was in Honolulu. He had seen Sam Graham, who is now in business for himself there. Si was not our only traveller this summer. Evidently some of our reunion participants felt the need of travel to recuperate. A card from Frank O'Neil was mailed from Barcelona. "Fine place for a reunion," he thought. And the J. Adalberto Roigs also roamed around the Continent.

A few appointments of our classmates on Institute committees. David J. Sullivan, industrial products sales manager of Du Pont's fabric division in Bridgeport, was elected to a three-year term on the national nominating committee. A new high has been reached for alumni memberships on Department Visiting Committees. For Biology, Hudson Hoaglund; Food Technology, Philip K. Bates; School of Industrial Management, the Chest Aide, Edward J. Hanly; and Meteorology, Clarke Williams.

So much for the moment. By now you will have had a letter from Pret Littlefield with a lot more information than we can get in this limited space. That's good. — HENRY B. KANE, *Secretary*, Room 1-272, M.I.T., Cambridge 39, Mass.

• 1925 •

Of course you have already sent in your advance reservations for the 30th Reunion, but, in case you have forgotten it, won't you take care of it today? Of course, as Reunion Chairman, your Secretary is somewhat prejudiced, but the

planning for the reunion activities is in the hands of some 25 or 30 other classmates, and the chairman as yet can only say that, with these men working on the program, the reunion is something you can't afford to miss. You shouldn't try to keep your wife in the dark in regards to the reunion plans because a large Ladies' Committee, under Mrs. Fred Greer, will soon swing into action, and when the wives hear about the plans, your decision to stay away from the reunion may be abruptly changed. Later Review notes will give you more detailed information regarding plans and the names of those who are responsible for the various activities. A Nominating Committee, under the chairmanship of Kenneth W. Robie of 20 Copley Street, Brookline, Mass., has been formed. Other members are: A. A. Lauria, 1021 Fair Oaks Avenue, Oak Park, Ill., G. N. McDaniel, Jr., Box 451, Borger, Texas, Garvin A. Drew, A. Schrader's Son, 470 Vanderbilt Avenue, Brooklyn, N.Y., and R. P. Price, R.F.D. 1, Erie, Pa. I am sure any member of this committee will be glad to have your ideas and suggestions.

As to news of class members, it is fortunate that your Secretary receives the journals of the engineering societies of New England. Otherwise, he would not have realized that Henry F. McKenna is now chairman of the Boston Chapter, American Society of Safety Engineers. All of us by now realize that an engineering training is fine preparation for many lines of endeavor. The Reverend Robert S. Stansfield, XV, is, according to the Alumni Records, pastor of the large Second Baptist Church in Auburn, N.Y. Last August, the Reverend Mr. Stansfield returned to the First Baptist Church at North Reading, Mass., the church of his ordination and his first pastorate, to renew friendships and to bring a message of greeting and inspiration in the absence of the regular minister, who was on vacation. The Reverend Stansfield saw service in World War I and came out with the rank of captain. He of course attended M.I.T., as already noted, and, without having attended divinity school, became pastor of the North Reading Church. He then completed courses at divinity school within a period of two years and was ordained in that church. The Reverend Stansfield gives much credit to his wife who brought both glamor and leadership to the important role of pastor's wife, and it was not long before calls came from other churches which could not be denied as the fields of service were so great. From North Reading, he went to a church in Dorchester and then on to his pastorate in New York. During World War II, he was granted a leave of absence and served as chaplain with the U.S. Army.

In the way of announcements, the president of the Goodell Company of Antrim, N.H., has recently announced the appointment of George E. Mason, II, as vice-president in charge of sales, and a letter from Tod DeFoe carries the interesting information that he is joining the F.O.A. and going to the Philippines on a job which has been defined as "Chief, Industry Division and Chief Advisor" to assist in the industrialization of the

Philippines and to aid the financing of such industrialization as well as to assist present industries to become more important. He expects to be away for a two-year period on this assignment, but we still hope he can find a way to be with us next June. — F. L. FOSTER, *Secretary*, Room 5-105, M.I.T., Cambridge, Mass.

• 1926 •

Your Secretary has been crossing paths with Austin Kelly recently through a mutual friend and local man o' the sea, Duffy. This summer with my new Star boat being a bit strange and very lively and also with hope of getting her into the North American Championships, I talked Duffy into skippering while I crewed (I've since learned that the crew is the slave), so Duffy and I saw a great deal of one another. This fall Austin decided to take a cruise in the Chesapeake and wrote Duffy to see if he would come down and skipper his yawl and Duffy took the job. He left Rockport armed with all kinds of missiles from me, "When you see that red-headed so and so, give him a good kick in the shins from Smith." Strangely enough, when Duffy returned he had a basket full of brickbats from Kelly, "When you see that gray-haired old buck Smith — push him off the dock for me, and so on," plus a few unprintable Kellyisms. In addition, we almost did cross paths at Oxford, Md., where I went for the fall Star wind up series — arriving there on Friday night, only to find that Austin had put in at the Tred Avon Yacht Club only a few days previously. Quoting from a recent note Jim Killian sent us, "On the chance that you did not see the attached announcement in the New York Times, I send it along for the Class Notes. It is nice to see Bill Latham picked for this big job." And the clipping verbatim stated, "W. H. Latham put in charge of St. Lawrence Power Work. William H. Latham has been appointed resident engineer in charge of construction of the St. Lawrence power project, the State Power Authority announced here today. For almost 30 years, Mr. Latham has been in charge of large-scale design and construction. He has been chief engineer in charge of operations and maintenance for the city department of parks since 1936. He was associated earlier with the Long Island State Park Commission. He is a graduate of Massachusetts Institute of Technology. The authority said that it expected to open a field office in the Massena area about September 15." This is wonderful news about Bill and the Class of '26 extends hearty congratulations. Incidentally, Bill, we have a classmate who, I believe, lives in Massena — Joel Tompkins, Course VI, originally from Salem, Mass., and now connected with The Aluminum Company of America. One of our dependable "Assistant Class Secretaries" has come through with his most welcome annual letter. I say *most* welcome because all I have to do is put some quotation marks at the beginning and end and clip it to the notes, and of course it is nice to know what is happening in the Detroit area. From Gordon Spear we quote, "Dear George, I thought you would be interested in the attached clipping taken from the Pontiac

Press, 'Success in developing a drug which they say will cure typhoid fever has been announced by Dr. Albert E. Heustice, Michigan State health commissioner, and Dr. G. D. Cummings. Dr. Heustice said the drug, developed in state health laboratories under Dr. Cummings' direction, is the first known cure for the disease. Dr. Cummings is in Mexico where the drug is under test on humans.' This is a further indication of the work being done by our classmate, Dr. Cummings, who has been head of the Michigan State Health Laboratories for several years. Although I don't seem to be able to find him in on some of my infrequent trips to Lansing, I do follow his activities in the newspapers. He comes from my home town of Quincy and we went through Quincy High School and M.I.T. together. In fact, it was Dr. Cummings who introduced me to the young lady who later became my wife and strangely enough, I have never held this against him. This summer Pink Salmon with his wife and two boys, stopped off in Detroit on the way back from a seven-week tour of the west. We had arranged for a visit through the Cadillac Motor Car Division since the Salmons, particularly Bill who has just finished one year at M.I.T., wanted to see a motor plant. They were also interested in seeing a Proving Ground in operation but, prior to the introduction of new models, this is next to impossible. We did have an excellent visit through the Cadillac Plant where we were shown by special trip, the final assembly line, the foundry, and the motor machining and assembly operations. I was happy to be able to go along on this trip for despite the fact that I have lived in Michigan for almost 28 years, it was my first trip through the factory. My other trips to Cadillac were confined to the Cashier's office and the new car drive-away operation. In talking to Ed Ash '22 a couple of weeks ago he told me that Morris Ash, Class of '26, is still in Korea with the rank of lieutenant colonel but is expected to return to the States within the next few months. Earlier this month I attended the annual Fisher Body Craftsmen's Guild Award Dinner and, of course, missed the opportunity I formerly had of speaking with Dr. Compton. Mr. J. E. Goodman, Vice-president of General Motors and General Manager of the Fisher Body Division, paid a high tribute to the memory of Dr. Compton and stated that the Guild had lost a valuable asset by Dr. Compton's death." Bachelor Barney Billings has dropped us a note advising of a change in address to New York City where he will be working on technical service problems for the Virginia Carolina Chemical Corporation on their fiber "Vicara." Barney's office is at 99 Park Avenue (tel. Murray Hill 2-0611). He will be pleased to hear from any of the gang when they are in town. Speaking of New York City, do you recall that I mentioned in the notes that the Secretary of the Class of '39 mentioned a restaurant in his notes, a restaurant run by Dick Cella '39? I tried Cella's Restaurant when last in New York and found that it was everything it had been cracked up to be and apparently a very famous old place started by Cella's father. The steaks were

delicious and the lobster, too. Fortunately, I had a customer in tow, the tab was a little steep but definitely worth it for such a special meal. It seems strange on this beautiful October Sunday evening to be sending out Christmas Greetings but this is the December issue. To you and yours a cheerie and a happy holiday season and good health for the New Year. — **GEORGE W. SMITH, Secretary, c/o E. I. duPont de Nemours and Company, Inc., 140 Federal Street, Room 203, Boston, Mass.**

• 1927 •

American Aviation recently announced that George W. Brady, director of engineering for the Curtiss-Wright Corporation's Propeller Division, has played a leading role in the development of the propeller, the case for which he argues so cogently. His work in the development of the reversible propeller brought him an honorable mention for the 1947 Collier Trophy and the Sylvanus Reed Award in 1948. In 1949 he assumed his present position.

The following classmates have been nominated by the Alumni Association as members of an M.I.T. Corporation Visiting Committee: Clarence L. A. Wynd, for the Department of Chemistry, and Richard L. Cheney for the Department of Food Technology.

The *Brockton Enterprise and Times* recently carried an article concerning the 1954 United Appeal-American Red Cross: "Louis F. Eaton, 257 Prospect Street, Brockton, Mass., has been appointed by James J. O. Stone to a top post in the current campaign organization. The drive opens in factories in mid-September and October 5-27 is set for the general city solicitation. Mr. Eaton will direct the drive for 29 agencies in the telephone, gas, electric, and street transportation groups. Currently he is a director of the Y.M.C.A."

Herbert M. Houghton dropped by two weeks ago to say hello. He was spending a short time here in New York before returning to Calgary. Charles C. Smith of Louisville, Ky., has been in N.Y. for the past week and dropped by to visit and bring us some news of Chungsoo Oh who is now located in Seoul, Korea, with offices in Seoul, Tokyo, Hong Kong, and Singapore. Charlie has kept in touch with Chungsoo since graduation but lost contact with him when the Korean War broke out. It was at a Reserve Officers' meeting in Louisville, where Charlie met a Captain Kim from Korea. By a strange coincidence Captain Kim knew of Chungsoo through his uncle, and brought a copy of the 25th Reunion Book back to Korea for Chungsoo. A letter from Chungsoo gave some idea of the hardships the family had gone through during the recent Korean War. Fortunately his family has survived and his son and daughter are in colleges here. At the present time Chungsoo is on a trip through Europe and will arrive in Boston about the first of November.

It is with deep regret that we record the death of James H. Hopkins of Alliance, Ohio, on August 16, 1954. No details have been received. — **JOSEPH S. HARRIS, General Secretary, Shell Oil**

Company, Aviation Department, 50 West 50th Street, New York 20, N.Y.

• 1932 •

Tom Jenkins has finally become a M.I.T. dignitary. Tom has just been appointed alumni member of the M.I.T. Corporation Visiting Committee for the Department of Geology. That will be getting Tom east, at least once in awhile, from his Texas haunts. We often wonder what Texas has done to the famous Jenkins' soft talk. John Brown moved over as assistant chief engineer of National Distillers Products Corporation after that Company had absorbed U.S. Industrial Chemicals, where John had been assistant chief engineer. Between jobs John took a seven weeks' trip to Europe, flying over, visiting nine countries, and returning on the *United States*. Coming back with him on the boat was G. J. Garbarino, X, of the Class of '33. Stu Fleming has moved to manager of the Valuation Department of Ford, Bacon and Davis. Stu likes consulting work, telling us that no two days are the same. He is well absorbed as a member of the Board of Education at West Orange, with a \$4.5 million school expansion program, which will keep him busy, he says, for more than four years. He promises definitely to make the Reunion. Mark Cunningham now reports in from 302 Jamaica Boulevard, Carle Place, Long Island, where he has moved to take up selling for the home office of his company, American Hospital Supply. Mark will probably miss his New Hampshire gardening and fishing. Gordon Levinson has become president of Morris Rosenbloom Company, wholesale distributor of electrical appliances, fishing tackle, sporting goods, and so on. Gordon and his wife live at 54 Shepard Street, Rochester 20, N.Y., with their two children, Billie and Debbie. Gordon reports a good range of outside interests and hobbies, which will probably suffer with his new responsibilities.

Ed Blaisdell has been appointed lecturer in chemistry on the faculty of Juniata College, Huntington, Pa. Ed taught some time ago at Siena College, then had a 10-year go at industry, ending up in the Pioneering Research Laboratory of DuPont's Textile Fibers Department at their Experimental Station in Wilmington, Del. Ray Hawksley writes us from San Francisco: "Running my own business. I have about 6 hats — chemist, salesman, secretary, beaker washer, bill collector, deep thinker and planner of future policy. I have never had so much fun in my life. I have no boss, so there is nobody to prevent me from putting in 60 hours a week. When I make a mistake and lose money, my conscience doesn't bother me about wasting the stockholders' money, because it all comes out of my own hide. I have been on my own for four years, under the style of Ray W. Hawksley Company, Chemical Engineers. The business is principally concerned with industrial water treatment." He must be quite a creative fellow, with a few patents and papers to his credit, a patron of the arts and a follower of Dixieland music. Meir Hershtenkorn (Degani) has been made head of the Science Department of State University

Maritime College, Fort Schuyler, Bronx 61, N.Y. This college trains cadets and midshipmen for the Navy and Merchant Marine. Meir says he is a member of "one dozen societies." F. Curtis Tucker, 30 Lexington Parkway, Pittsfield, Mass., has been made manager of Eastern Sales for the G.E. Chemical Division's Plastics Department. Curtis has been with the Chemical Division since 1949 as division purchasing agent and as manager of materials engineering in the Chemical Materials Department Engineering Section. This is a newly created post involving coverage of New York, Pennsylvania and the Atlantic Seaboard. Curtis and his wife, the former Ruth Hopkins of Fairfield, Conn., have three children and will move to Taunton. Dick Huessener is a sales engineer and partner of F. W. Rockstraw and Company, Pittsburgh, manufacturers' representative. Dick is a recent groom, having married Margaret Perry in 1950. They have one boy, two years old. Dick is another Reunion candidate.

Some of our graduate student class members are in the news. Harold Mangelsdorf has been made a director of Esso Standard Oil Company. Harold has been general manager of East Coast manufacturing since 1952, after a career of working up through the Baton Rouge and Bayway refineries. David Pryde, with Pittsfield G.E. since 1941 as plant engineer of general plant facilities, is director of the 1954 Y.M.C.A. membership campaign there. Neil Connor has been made director of Architectural Standards in the Federal Housing Administration, Washington, D.C. Our Service classmates are also in the news. Captain Philip W. Snyder has been made commander of the Boston Naval Shipyard, where he comes from the post of Director of Ship Design in the Bureau of Ships. Colonel William J. Crowe has retired both from the Army and as commanding officer of the Springfield Armory. Colonel J. Paul Breden has become commander of Fort Myer, Va. Most recently he has served as deputy chief of staff, logistics, for the First Corps in Korea. Brigadier General Louis T. Heath is commanding general of the 25th Division Artillery in Korea. All best wishes for a Merry Christmas! — **ROBERT B. SEMPLE, Secretary, Box 111, Wyandotte, Mich. Assistant Secretaries: WILLIAM H. BARKER, 45 Meredith Drive, Cranston, R.I. ROLF ELIASSEN, Room 1-138, M.I.T., Cambridge 39, Mass.**

• 1933 •

Word came late last summer of the death on May 4 of Burt E. Moritz in Houston, Texas. He is survived by his wife and two sons. A professional photographer in Houston, Burt was the inventor of the "radio knife" used in brain and urological surgery which cuts by radio frequency.

During the summer months, much news of many of the Class. Preoccupation with a new assignment and move of office in September resulted in no notes last month; but don't get the notion that '33 is going back into mothballs, so let's have some more personal news to share with the rest of the Class. And if you can't write, telegraph, or telephone, then come to Cambridge!

Jim Vicary's son, Chuck, entered Tech with the class of '58: the spitting image of the old man. Now we hope to see more of Jim around Cambridge. Seen at Alumni Day last June: Bill Bauer, Clarence Farr, Tom Galvin, Ralph Garrett, Ed Goodridge, Bill Murray, Ed Pierce, George Seavey, Westy Westaway. Speaking of reunions, George Henning has printed the vital and not-so-vital statistics of the 20th reunion; some of the pictures are revealing, if not flattering, but we won't look any better on our 40th! Jack Andrews has become executive assistant to the Highway Commissioner for the State of New Jersey and in May was elected president of the M.I.T. Club of New Jersey; Jack will be a busy young man, but he is fully equal to both assignments. Congratulations also to Bill Rand who recently became vice-president of Newhall Land and Farming Company with headquarters in Newhall, Calif. With 264,000 acres in six locations and dealing in such items as oranges, lemons, walnuts, avocados, cattle and oil, Bill is really up to his ears in responsibility in a wide variety of interesting enterprises. Bill is only 40 miles from Los Angeles and invites wandering classmates to look in on him; we guarantee we will! We have an interesting letter from Les Fletcher who has recently become research director for the American Society of Tool Engineers Research Fund, with headquarters in Detroit. Married, with four children, Les came to M.I.T. after graduating from West Point. He retired from the army in '47 and until recently was technical director of a commercial testing laboratory. News from Rensselaer Polytechnic Institute tells of the appointment of V. Lawrence Parsagian to the Chairmanship of the Engineering Group at R.P.I. and Professor of Nuclear Engineering. Lawrence has been director of the Research Division of the New York Operations Office of the Atomic Energy Commission; he is married and has two children. Another classmate in the news in the nuclear field is Emil Neubauer, who is the senior development engineer with the Trane Company in La Crosse, Wis.; Emil worked at Oak Ridge during and after the war.

Speaking of the military, Colonel Douglas G. Ludlam is now commanding officer of the Springfield (Mass.) armory; he has had a long and brilliant career in the service. Dorothea Shanney has recently been appointed chief dietitian of the Milton (Mass.) school system; she was formerly at the Sheppard Pratt Memorial Hospital in Townsend, Md. Harold B. Robb was cited last spring for achieving high honors at Western N.E. College; married, with two children, Harold is an engineer with the Western Massachusetts Electric Company. Giving valuable service to M.I.T. as members of departmental visiting committees are: Philip C. Rutledge in Civil and Sanitary Engineering, David B. Smith in Meteorology, and Robert H. Winters in Geology. Heard from briefly: Duke Selig, who is with Buffalo Electric Company in Houston and secretary-treasurer of the M.I.T. Club of Houston; Werner Bachli is way down in Sao Paulo, Brazil, with G.E.; Olav Mong, now in Wallington, N.J., after a long series of engineering assignments that took

him to many foreign countries. Seen in and about Cambridge: John Longley of Albany, who dropped in for a brief chat; Bill Keith, who phoned from New Jersey about a new student at Tech. Your class officers send warm personal greetings for a most pleasant holiday season and New Year. — GEORGE HENNING, *Secretary*, 330 Belmont Avenue, Brooklyn 7, N.Y. R. M. KIMBALL, *Assistant Secretary*, Room 3-234, M.I.T., Cambridge, Mass.

• 1934 •

This will acknowledge with appreciation letters received since June from Mal Stevens, Phil Kron, Ken Lippitt and John Hrones, all with interesting news of classmates. Without widespread co-operation in sending in such items this column will be of little interest. This month we pick up various news items which have accumulated over the summer. Ben Salmon recently left Convair at San Diego to become western representative for Norden Laboratories Corporation. Upon leaving the Institute, Ben designed sailplanes with Bowlus-duPont. After a period at Lockheed Ben joined Ryan Aeronautical Corporation during World War II as chief engineer where he was responsible for the design of the Ryan Fireball navy fighter. The last seven years at Convair include work as design engineer on ramjet power plants as well as project engineer on advanced propulsion system research and missiles. Ralph Marotta of Malden was granted a patent having to do with the treatment of wood to make it flame and weather resistant. Ralph has been with Monsanto Chemical Company since 1936. As a research chemist he has been concerned with lacquers and other coatings which are made at Monsanto's Everett plant. The Marottas have three children. Jack Cooper was appointed manager of the New York branch of the Hobart Manufacturing Company last summer. Bob Franklin and Eric Isbister of Sperry Gyroscope Company last spring presented papers dealing with radar to several engineering groups. Bob and Eric are in Sperry's radar engineering department.

Mal Stevens had an unexpectedly pleasant surprise after returning from Portsmouth last June. Quoting Mal, "I had been home from the reunion about one hour, when I received a phone call from John G. Brunner, Course I, who was then in Chicago. He said he couldn't wait any longer to find out who was at the reunion and what kind of a time we had. He had hoped to make it but his work with a management consulting firm was keeping him a bit too busy. He said that he would have tied with Bill Mills for the five children family prize, and that both he and his wife hoped to make the 25th reunion. He particularly wanted to be remembered to his Course I friends." Walter Hofmann moved to San Francisco to become chief engineer of Construction for Bethlehem Pacific Coast Steel Corporation, Steel Division. Up until then he had been with Bethlehem Steel Company in Johnstown, Pa., lastly as chief engineer of their steel plant in that city.

Dan Strohmeier made news last June when his yacht, the *Concordia yawl Malay*, won the Newport to Bermuda race. Dan has been vice-president in

charge of the shipbuilding division of Bethlehem Steel since 1948 and now lives in Scarsdale, N.Y. Dan's wife broke the champagne bottle over the bow of the S.S. *Master Peter*, one of our largest tankers, when she was launched at Bethlehem's Quincy yard. Neal Karr is now an assistant vice-president of the Singer Sewing Machine Company. Neal has been works manager of Singer's Canadian plant at St. John's since 1952. Red Martin became vice-president and general manager of WMUT and WCAX Radio, Inc., in Burlington, Vt., last August. Red had been an electronics consultant since 1951 at which time he left the staff of the Institute's electrical engineering department. The following note was received from Ken Lippitt who, by the way, is vice-president of Technical Appliance Corporation of Sherburne, N.Y., which makes high frequency antennas. This might be submitted to our long-arm-of-coincidence department. "I recently had an experience which might be considered a news item for the Class of 1934. I was scheduled to give some lectures on TV antennas in Barre, Vt., and Middlebury, Vt., last month. When I arrived in Barre our representative had arranged to hold a joint meeting with the new TV station which was due to go on the air at Burlington, Vt. The general manager of WMVT was to be the other speaker at this meeting. I was delighted to find the general manager was none other than 'Red' Martin. Red has done a terrific job building a TV station on top of Mt. Mansfield, the highest point in Vermont."

Bob Gunness is now general manager for transportation and supply operations for Standard Oil Company (Indiana). This involves purchasing, traffic, distribution, marine operations, product pipelines and operation of bulk terminals. Bob joined Standard in 1938 and became assistant general manager of manufacturing in 1952. He was elected to the company board last year. A Hartford news item dated last June reports the appointment of Jacob Jaeger to the newly created post of chief engineer at Pratt and Whitney division of Niles-Bement-Pond Company. He had been with Pratt and Whitney since 1940 and since 1951 had been assistant manager of machinery engineering. Robert G. Butler became a general officer in the Army last May. He had been graduated from West Point in 1928 and got his master's degree with us at the Institute. Since 1939 he has been with the U. S. Army Ordnance Corps. His duties have taken him to various ordnance installations and his performance has earned him several decorations. Another of our military classmates, Colonel Horace A. Quinn, was last summer named manager of the General Engineering Laboratories of American Machine and Foundry Company in Greenwich, Conn. He was in the class of '27 at West Point, received his master's degree at the Institute and later attended Harvard Business School. Colonel Quinn retired from the army in 1946, at which time he was chief of the artillery branch of the research and development division attached to the chief of ordnance. AMF in Greenwich is engaged in work on atomic energy, radar, sonar, rocket launchers, gun loaders and

plant automation. How about all those vice-presidents? Next month look for Phil Kron's Rochester column. — **WALTER McKay, Secretary**, Room 33-217, M.I.T., Cambridge, Mass.

• 1938 •

I must apologize for having missed the first issue of the season; it hardly seems the way to start the year. It was an eventful summer, so perhaps I have some excuse. In May, Marion presented me with another daughter, Cynthia Jane. That now evens the score for the Ackers, with the others being Karl, twelve, Merrilie, nine, and Glenn, four. We polished off the summer by moving to a larger house. We are still in Lexington, the new address being 49 Hancock Street.

When I first received the material for these notes I thought there would be a lengthy report this month. But the bulk of the mail was change-of-address slips; I had company in moving, with 74 members of the class reporting new addresses.

I understand that a recent issue of the *Saturday Evening Post* featured an article about Fran Hagerty and his colonial furniture. I didn't happen to see it, but I suspect many of you did. He also had a write-up in the *Wall Street Journal*. Bert Grosselfinger sent a card this summer from Italy. He had planned to make Alumni Day, but had to leave for Europe instead. He has his office in the Empire State Building and can be found there through the directory under his own name. One of our news items announces a new electron-tube development laboratory by General Electric Company. It is near the new educational and technical center being developed in Palo Alto, Calif., by Stanford University. Manager of the laboratory is Ray Oldfield. Doc Wochos, one of our assistant secretaries, has been appointed manager of case manufacturing at the Wadsworth Division of the Elgin Watch Company, Dayton, Ky. He was formerly at their ordnance plant in Elgin, Ill. Donald Macdonald, who has been in Turkey as foreign service officer of the U.S. Department of State, was a speaker in June before a meeting in Worcester, Mass.

Other appointments and promotions include that of Richard Young to the post of treasurer of the Acushnet Process Company. Colonel Staunton L. Brown has been appointed Little Rock, Ark., district engineer. Donald Robbins is now a director of the Singer Manufacturing Company. Joseph Vallone has been appointed public works director for the state of Rhode Island. Members of the class who attended Alumni Day in June were: James E. Acker, Louis A., Jr., and Mrs. Bruneau, James J. Ferry, Jr., Thomas Garber, Norman B. Leventhal, David L. Morse, Donald P. Severance, and Edward K. True. — **DAVID E. ACKER, Secretary**, Arthur D. Little, Inc., 30 Memorial Drive, Cambridge, Mass.

• 1939 •

This month we have a report from our western correspondent, Hal Seykota. He writes as follows.

Dick Loesch who, I believe, was a Beta, and who is now with Boeing in Seattle, was the co-pilot on the big mon-

ster jet bomber which was constructed by Boeing and recently tested in Seattle. This was the plane that had the big publicity in *Life* Magazine about the collapse in front wheel support. Not having seen Dick in a number of years and, whether or not he is as fat as I am, I am wondering if this might have caused the event or whether one of Alexander's and Withington's boys zipped when he should have zaggged. Ben DeSimone is here in Los Angeles, living in a nice suburb just out of the smog and just north of Santa Monica. Ben is president of his own corporation and, among other things, he is engaged in the manufacture of certain hardware goods such as faucets and dish-washing appliances. Ben is still interested in engineering and is doing some consulting work for National Corporations, too. Bob Fife '40 also lives here in Los Angeles, but in a southwest suburb near the ocean and is practicing law in the Long Beach area.

George Cremer is still in San Diego with Solar Aircraft and is due in Los Angeles tomorrow for an S.A.E. Convention. I hope to see him then and, if he does not come up, I proposed to drive down to San Diego this weekend and visit with him and Mrs. Cremer (nee Billie Tyson) and the "Cremer Five." For your information, Number Five was born last week and the little princess is called Michele.

Today, Bob Casselman, sales manager of Polaroid Corporation and one of the spark plugs of our Fifteenth Reunion, telephoned me from Hollywood where he was on a sales mission (he says). Bob did mention that he was too busy to have dinner or spend the evening with me, so I hope that you see that this letter gets to his home in Newton and that Dottie has a chance to evaluate the situation. Morrie Nicholson is a Ph.D. living in Chicago and is in association with a university there. He recently wrote a very learned paper concerning the grain structure of metals and I read this paper because, at the time, I was interested in developing one of our products and selling it for carburizing of steels. In a recent issue of *The Journal of Metals* for December, 1954, I noted that Bud Shaler would be chairman of a meeting which will be part of the Titanium Symposium at the Morrison Hotel in Chicago, November 1 to 3, 1954.

On a recent trip to Seattle, I visited Nils Rosenberg, who is fast becoming the "Alexander Botts" of the Pacific Northwest. Nils was in the Class of '40 and now owns his own business in Seattle, selling Allis-Chalmers Tractors to the farm market. On the particular day of my visit, Nils had just sold a big machine in the face of overwhelming odds when his competitor's tractor was on the prospect's premises. Nils accomplished the Herculean feat of closing the sale and everybody lived happily ever after, including Janet and I, who helped Nils celebrate his victory that evening.

Finally, I might say that the Seykotas are moving southward from Portland to Los Angeles. I have accepted a position as sales manager of the R.T. Collier Corporation and our products include: petroleum coke, which is used for electrodes-Peach Pit Charcoals, which are

formed into briquets and used in barbecuing, and-activated carbons which are used for purifying liquids and gases. Temporarily, I am living with Al Lakes, who is an engineer and who has reached an enviable state in his career. This year, he is taking a 4-month vacation. Much tennis, swimming, dating and such stuff. Tomorrow he leaves for ten days in Tijuana and Mexico City and when he returns he plans a three week junket through Zion Canyon, Bryce Canyon, and nearby territories. Sort of rough out here in the West on bachelors, isn't it? So far, everything is fine here in Los Angeles except the smog and we manage to do about it exactly the same as you Cod Fish Eaters do about the Boston weather. — **GEORGE BEESLEY, Secretary**, 38 Homestead Road, Lynnfield Center, Mass. **MICHAEL V. HERASIMCHUK, Assistant Secretary**, P.O. Box 495, Bethlehem, Pa. **HAROLD SEYKOTA, c/o R.T. Collier Corporation**, 714 West Olympic Boulevard, Los Angeles, Calif.

• 1940 •

Our Class has been honored by the nomination of Tom Creamer by the Alumni Association as one of the alumni members of the Visiting Committee for the Medical Department at M.I.T. Several of our classmates have been active along oratorical lines. Leslie Higgins recently gave a talk before the Orleans, Mass., Rotary Club on the 50 years growth of Goodyear Tire and Rubber Company and its contributions to national strength and security. Kenneth Davis who is now assistant director of the Division of Reactor Development of the Atomic Energy Commission spoke before the Stamford, Conn., Engineering Society on "Nuclear Energy for Civilian Purposes."

It is indeed with regret that your secretary must report the death of another classmate. Julian M. Barron, who was associated with us during his junior year, passed away on March 22, 1954.

Harold Hershfield has been appointed supervising principal for the Shawsheen school in Lowell, Mass. Previously he had been principal of the Westford Elementary School. Ed Conaty is taking a year's leave of absence from his job as Budget Officer of Rhode Island to concentrate on his private business, a mail advertising service. Jane Hastings, one of our most distinguished members, who has spent over 30 years in private industry as a chemist, has recently retired from General Electric where she has been training young chemists at the Pittsfield laboratory for the past 13 years. Her retirement is only from private industry however, as she is now a lecturer in Chemistry at Mount Holyoke College. Jane attributes her change in jobs to her desire to never get into a rut.

Another reminder to get ready to attend our 15th Reunion in the early part of June. Further details about the reunion will be forthcoming in future issues of *The Review*. Despite the fact that it was 88 degrees in Washington at the time this column was written it will be Christmas with snow(?) on the ground when you read it—so to each classmate a Merry Christmas and a successful and happy New Year. — **ALVIN GUTTAG, Secretary**,

Cushman, Darby and Cushman, 730-Fifteenth Street, Washington 5, D.C. MARSHALL D. MCCUEN, Assistant Secretary, Oldsmobile Division, General Motors Corporation, Lansing 21, Mich.

• 1941 •

Here's your chance to save \$145,000; that is, if your business has need of equipment for non-destructive testing or inspection of metal parts. Arthur Stevens is the president of the Gamma Corporation, which was organized last spring to sell radiation equipment for such work. In a story from the Framingham News, Art is quoted as saying that a cobalt-60 testing device made to sell for about \$4500 will "compete directly with a one to two million volt x-ray machine, whose costs for a complete installation would run from \$75,000 to \$150,000." His firm plans to sell equipment, install it, train employees who will run it, and to build a laboratory for field work and an inspection service of its own, which will be available to nearby manufacturers. The plant is in Mansfield, Mass., and he and his family (one son, one daughter) live in the same town. Art served as a research chemist with Linde Air Products Company in 1941 and 1942, later becoming a chemist at M.I.T., and then chief chemist of the electronics division of Remington Rand. He received his doctorate in inorganic chemistry, with a minor in nuclear physics, from Tech in 1948. He then went to Tracerlab as assistant technical director, and in 1950 was appointed director of contract research. In 1951, he was made a special consultant to the Air Force, and later that year, he was instrumental in the reorganization of Technical Operations, Inc.

Another of the Class establishing his own business is Jim Pickard, who has opened a consulting practice in atomic energy developments at 1518 K Street, N.W., Washington 5, D.C. Having worked since 1944 with the Manhattan Engineer District, the Atomic Energy Commission, and contractors for both these agencies, Jim has considerable background for his new venture. He is particularly interested in the effect of atomic energy developments on different types of business, and in opportunities for business created by atomic energy. Good luck to both of you, Art and Jim; we wish you many prosperous years.

Arthur F. Martin has been promoted to the position of senior research chemist with the Hercules Powder Company. He is presently with the staff of the Argonne National Laboratory on a special assignment for the company, having joined Hercules in 1941, and having held various research positions since that time. Edgar Engle has been made manager of cemented carbide products engineering, Carboly Department, General Electric Company, in Detroit. He has been active in manufacturing and developing cemented carbides ever since he came to the firm after graduation. Bill Ahrendt is serving this year as chairman of the Dynamic Systems Committee, Instruments and Regulators Division, of the ASME. Burnham Kelly is chairman of the Architectural Guidebook Committee of the Massachusetts State Association of

Architects. Henry Avery has been elected president of the M.I.T. Club of Western Pennsylvania; Grace Keenan, supervisor of Health in the Brockton Public Schools, was elected vice-president of the health education section of the Massachusetts Public Health Association; and James McNitt has been nominated by the Alumni Association as a member of the M.I.T. Corporation Visiting Committee for the Department of Biology. On the platform recently have been Ralph Baker, general purchasing agent for the Corning Glass Works, speaking before the Southern Connecticut Purchasing Association; and John Biggs, Assistant Professor of Structural Engineering at Tech, speaking to the Boston Society of Civil Engineers.

Address changes have been pouring in. There are so many that it is not feasible to print them herewith. However, if any of the Class desires the address of another classmate, it can be obtained from the Secretary or Alumni Office. — IVOR W. COLLINS, Secretary, 28 Sherman Road, Wakefield, Mass.

• 1942 •

To all who, many years ago, read the Johnsons' books on Africa, and to those armchair explorers in our midst we pass along a tale of Ronald Shainin's hunting trip as reported in the Buffalo Evening News by Bob Dorang. The half page story was complete with a photograph of full-bearded Ronald smiling triumphantly over a prize leopard he and his partner had just bagged.

"The blood-chilling charge of a wounded lion, the deadly rush of an African Cape buffalo — two young Buffalonians say these are within the price range of the average man! And you can launch your expedition right here at home. These men whanged away in a Bowmansville quarry to sharpen their marksmanship. They bought much of their camping equipment in Buffalo surplus stores. Their final score: Four lions, one leopard, three buffalo, four hyenas, a jackal, several antelope and abundant small game for food. Throw in, as well, a round of amazing experiences. The net cost: \$2200 apiece, or roughly the cost of a new car. Add \$1000 if you shoot your lions with color film as well as bullets. One of these hunters does.

You don't have to be a millionaire to go big-game hunting, according to the calculations of Ronald E. Shainin, contract administrator, and John Chisholm, engineer, both of the Bell Aircraft Corp. 'I had never shot anything bigger than a woodchuck before we went to Africa,' Mr. Shainin recalls. Mr. Chisholm's previous experience was confined to deer-hunting. Veteran big-game hunters in Northern Rhodesia called them 'stark raving mad.' They said: 'You don't have a white hunter (professional guide)? It's unheard of!'

Contrast such raw inexperience with this sober, confident remark from Mr. Shainin today: "'Dead' lions — or the nearly-dead ones — are the real killers."

One mortally-wounded lioness, in fact, died with its teeth sunk deep into Mr. Chisholm's thigh. Even with both front legs fractured by bullets, the animal charged him.

This story, however, begins when Mr.

Shainin, now 32, was a child. He read every big game hunting book he could get his hands on. There was Martin Johnson's "Simba" (lion in Swahili), "Congorilla" and the works of Carl Akeley. Mr. Shainin calls Akeley "the Leonardo de Vinci of African big game hunters." Later, as a flight engineer for Pan American Airways, Mr. Shainin made 70 flights over Africa. Many times, in the Victoria Falls area, he saw zebras, elephants and stalking lions in the bush below. He later hunted within 150 miles of this area. Three years ago, while working at Bell, he decided that his hunting dream had to come true. He began buying equipment. This took two years. Six months before departure time, Mr. Chisholm threw in with him. Basic equipment included a jeep, a two-wheel trailer, two .375-caliber H & H Magnum rifles (most hunters carry additional heavier-bore weapons), two .45-caliber pistols, jungle hammocks and medical supplies. The wise inclusion of aureomycin may have saved Mr. Chisholm's life.

The hunters picked their territory when they learned that the paramount chief of Barotseland, a part of Barotse Province in Northern Rhodesia, wanted lions killed in his area. Why would an African chief want two Buffalonians to exterminate lions in his own backyard? Mr. Shainin replies: "There is only one African tribe brave enough to tackle lions, the Masai of Kenya and Tanganyika. The Bantus would not hunt them even if you gave them guns." The two-man expedition sailed out of New York City last July aboard a British freighter bound for Capetown, South Africa. (Cost: \$260.) From Capetown they jeeped about 2200 miles to Victoria Falls. The hunt really got under way at Katima Mulilo, about 100 miles northwest on the Zambesi River. Here is an account, in Mr. Shainin's words, of how the hunters met a sort of guardian angel and began killing lions."

Mr. Shainin's story will be continued in the January issue of The Review.

It is very sad news that we report in the passing of William Gordon Tuller, Course VI-A. He was killed in an airplane crash in Shannon, Ireland, in September. Dr. Tuller took his master's degree with us and received his doctorate in 1948. He had worked at the Research Laboratory of Electronics at Tech, Raytheon, and at the time of his death he was vice-president in charge of engineering and director of Melpar, Inc., a subsidiary of Westinghouse Air Brake Company.

Our tenth reunion booklet has been mailed out leaving the files with some extra copies. If we have missed anybody or someone would like an extra please drop me a line. We shall be pleased to send them along while they last.

Rather belatedly we report the birth, last March 18, of a son, T. Q., Jr., to Ted and Norma Eliot. Norma is the former Norma Jo Jones of Oklahoma City. Ted also writes that Robert D. Snow is in Tulsa and that Lieutenant Bruce B. Clark is in Yukon, Okla.

This will reach you a short while before Christmas. Best wishes for a very happy holiday season. — LOUIS ROSENBLUM, Secretary, Photon, Inc., 58 Charles Street, Cambridge, Mass.

Chris Matthew and Samuel E. Perkins are the co-authors of an article entitled, "Fertilizers: Steady Growth, Solid Future," which appeared in the August 28 issue of *Chemical Week*. The article presented a run down of the short and long-range view on nitrogen, phosphates and potash, and predicted that the supply and demand of these fertilizers should be in balance in 1956.

In August of this year, Bernice Carter became the bride of Howard Graham in the Alumni Memorial Chapel at Michigan State College. Mrs. Graham is a graduate of Simmons College, and received her master's degree in bacteriology with our Class. Richard L. Bowen, Jr., and Phyllis Sewall Brown were married early in September in Duxbury, Mass. He received his S.M. and Sc.D. degrees from M.I.T. and is president of the Coated Textile Mills, Pawtucket, R.I.

I received about 50 change of address notices, mostly in conjunction with classmates who have sent in information for the forthcoming new edition of the *Alumni Register*. The *Register*, as you may know, lists all Alumni by classes and by location, as well as alphabetically, and is handy to have. You can order it from the Alumni Office. In the past I have occasionally listed new addresses, but I would rather write the details than that. So come on, gang, how about a little help? — RICHARD M. FEINGOLD, *Secretary*, 49 Pearl Street, Hartford 3, Conn.

• 2-44 and 10-44 •

All the sub-committees on the reunion bow in deference to the superb job done by the "Committee on Arranging Faultless Weather for the 10th Reunion at Lenox." If you lived in New England you might appreciate what the task involved as it rained every weekend for a month preceding the reunion and that caused the program committee many an anxious hour proposing "alternates." All events ticked off smoothly and the 108 who attended unanimously offered a vote of thanks to Chairman Scott Carpenter and his charming and tireless wife Barbara who contributed as much to the affair as the combined reunion committee.

The traveler farthest from home was Doc Docal and his wife Serita who flew in from Havana, Cuba. Doc is plant manager for U.S. Rubber in Havana, and although he makes frequent trips to New York this is the first time he took Serita along. From what Serita says Doc now has a constant traveling companion. All I can say is if I were Doc I would never have left her at home. If a prize were to be given to the most capable travelers I would nominate Bob Sullivan, wife, and three month old baby boy who came up from Bridgeport, Conn. They attended all events and efficiently provided for all the youngster's needs in a manner that would make a time and motion man's heart gay. Sy and Roz Bessen had been counting on attending this reunion for several years and consequently had arranged for all contingencies in advance, including the arrival of a new Bessen scheduled for June 15.

It was quite a sight to see Ed Jonash

and Joe Shrier roll up in their station wagon with a trailer and 12 foot outboard behind, plus a canoe and camping gear lashed to the top of the wagon! Saturday morning Joe found a particularly good beach on a point pitting out into a lake and ran a canoe ferry transporting classmates out and back. I shot some nice color movies of this, Joe. Ed is with the N.A.C.A. in Cleveland as a research engineer in the Lewis Flight Propulsion Laboratory. Ed is married with two boys — eight and three. Joe is a sales engineer for Monarch Aluminum Manufacturing Company working out of Cleveland.

About noon time on Saturday I got a call from Art Fuerman in New York City. Art had just arrived in New York to find that his plane had already left and he was planning to return home. It took quite a bit of strong convincing to get Art to take the train up which he did and he arrived in time for the cocktails. On leaving Sunday Art maintained it was something he fully enjoyed and was well worth the extra travel time. Art is still unhampered, unhindered and unmarried and living in Phoenixville, Pa., where he owns and operates an auto parts store.

We held a baseball game Saturday afternoon between the Youngsters 10-44 and the Old Timers 2-44, complete with ladies cheering section and buckets of cold beer provided by George Turain. The game was a tight one for several innings until Big Bob Ilfeld walloped one with bases loaded. Then the Old Timers deteriorated so rapidly that the Youngsters put in their second team, namely, the wives. John Granlund's wife Vee can throw a mean curve. Marty Hird tried to stretch a single into a double and they ran him down between the bases. Wait till Marty sees the movies of this!

Prior to the banquet all classmates were given questionnaires and requested to complete them so a statistical survey could be made of the 1944 Class. The results were compiled and they made for some humorous reading.

About 3 per cent of group reported that they were single and of those married 21 per cent claimed they had met their beloved while attending M.I.T. The longest married couple reported 11 years going down to some married but a few months. As for offspring the oldest reported was 10 years going down to many proclaiming the event was imminent. The breakdown of males vs. females gave the edge of 51.5 per cent to the boy babies.

Some data was taken on the material status of the group: 22 per cent live in the city, 58 per cent in the suburbs and 20 per cent in the country. 70 per cent of the Class reported as owning their own homes with age ranging from a few months to 150 years, the average being about eight years old and average value figured at \$19,500. The average house contained about six and one-half rooms while someone with an eye on the hotel business had 13 rooms. 18 per cent of the Class reported as owning two cars and 82 per cent as owning one car, average vintage 1952. A few owned boats although no planes were reported. Regarding the military 95 per cent served breaking down to 60 per cent Army 40

per cent Navy and ranks went from private to captain in the Army and lieutenant j.g. in the Navy. The average service period was three years with only 30 per cent signing up for the reserves. Many of our members, 43 per cent, have gone on with their education by additional courses and night school. Attending the reunion we had eight who had acquired master's degrees and five doctorates.

The report on the question: "Are you in the field studied at M.I.T.?" gave a 63 per cent "Yes," which surprised everyone. Job titles were varied including president, vice-president, project engineer, sales manager, manager of engineering, plant manager, plant engineer, production engineer, treasurer, advertising manager, industrial relations manager, and so on. The average annual income of the group figured \$9,700 and the increase expected for the next five years would give a figure of \$13,000. The average 1944 man changed jobs three times, but those who changed more often than that seemed to be in a slightly higher income bracket. Sixty-two per cent travel for business covering about 8,000 miles per year mostly by plane and auto.

Of our group 37 per cent own equity in the company for which they work although 57 per cent own stock in other companies. A good portion of the Class belong to various technical and professional societies in their field — 66 per cent.

The physical characteristics of the '44 man have changed. Sixty-nine per cent reported a gain in weight, 27 per cent replied no change. A small minority of 4 per cent actually lost weight. The average gain was about 12 pounds. "How much hair have you lost?" brought out some interesting replies. Fifty-two per cent said no change, and 48 per cent felt it was getting "thin." One classmate said he lost 40 per cent another just replied "huge quantities" and a third tabulates his loss each day and has a total gone of 6,372 as of June 9. The eyes are dimming just a bit from overwork and 21 per cent have to wear spectacles now, compared to none 10 years ago.

"Would you send your son to M.I.T.?" was asked of both father and mother, and both replied to an overwhelming 95 per cent "Yes." There were a few stalwarts who wouldn't allow their child to go, and one replied that if his son did want to go he would doubt his basic mentality and ship him off to be psychoanalyzed. — BURTON BROMFIELD, *Secretary*, 72 Woodchester Drive, Weston, Mass.

• 1947 •

The Good Fairy or Kindly Angel, or whoever it is that watches over Despairing Class Secretaries, finally came through with a touch of the Magic Wand; and I have been almost overcome with coincidental meetings and numerous situations that serve to strengthen an inward abhorrence of that much overworked cliché, "It's a small world." One of my most startling experiences happened while I was on vacation this past summer. I had hoarded my pennies all winter, and set off on a Caribbean Cruise aboard the S.S. *Santa Cerro* of the United Fruit Company. We had scheduled stops at Santiago de Cuba and Kingston, Jamaica, to dis-

charge our cargo of California onions, Neapolitan garlic (what a relief to be rid of those fragrant items), Long Island potatoes, Virginia lard and Indiana Studebakers. Then on to Santa Marta, Colombia to take on 1500 tons of *oro verde*, or green gold, as the locals call bananas. They are shipped unripe in refrigerated holds — just in case you didn't know. All in all it was a most interesting and entertaining voyage. We missed all the hurricanes, except for a minor brush with Carol; calm seas, velvet Caribbean nights, warm sun, tropic moon . . . but I digress.

It was in Kingston that the event I mention above occurred. We had but eight hours in port; and in the afternoon, my traveling companion, Bob Summers '46, and I, having seen most of the approved sights, and eaten an excellent lunch at the Myrtle Bank Hotel, like good tourists that we were, stopped in a camera store to replenish our fast-diminishing supply of film. I had just completed my purchase, and, as I turned to leave the store, I came face to face with Jim Ham. We greeted each other with equanimity, sang a quick chorus of "*Sons of M.I.T.*," and then proceeded to tell each other what we were doing there. Jim, who is an assistant professor in the department of electrical engineering at the University of Toronto, had flown to Jamaica for a few days in order to serve as best man at a friend's wedding. We really didn't have too much time for conversation as Bob and I had to get back to the ship, but perhaps Jim will now write us a letter and fill us in on the details.

Just this past week (second in October) I was in New York on a business trip visiting the I.B.M. headquarters. I had spent the morning discussing various aspects of digital computational procedures, and was being taken on a tour of the establishment when I spotted John Bartelt. I've lost the United Air Lines ticket folder on which I made my notes, so I shall quote from memory. John can write to correct me if I'm wrong. He is currently working for I.B.M. in Poughkeepsie, and participated in the design of their 701 computer, which is one of the latest and fastest digital jobs. He is married and has a son, Mark, three years old. I carried on to Washington from there, exchanged blows with Hurricane Hazel, and, wearily wending my way homeward, I paused to change planes at LaGuardia Airport. I was just about to board the Boston flight, when Ken Parmelee '48, came walking up the ramp, returning from Detroit. Ken went to New York University Law School after graduating from Tech, where he was class president his senior year, and as a patent attorney is now a partner in the New York law firm of Curtis, Morris and Safford. Ken has three daughters, the oldest of whom is five and a half. To complete this round of "small-world" episodes, I must mention one more incident. Tom Lehrer, Mathematician-Entertainer, Writer of Sophisticated Songs and Funnyman Supreme, appeared recently at Storyville, now in the Hotel Copley Square. I was in attendance at a Friday night performance with a group of friends, and neatly tripped Bob Davis as he sidled past our table. Bob, who is an assistant professor of mathe-

matics at the University of New Hampshire, and who plays a reasonably cool 'cello, didn't say whether he was there for the music, the amusement, or just to exchange theorems with Mr. Lehrer. He did say that he likes his teaching job but spends every weekend with friends in Cambridge.

Our Alumni Day participation was, as I've come to expect, a total flop. Besides myself, the only ones of our clan who attended the Statler banquet were Harl Aldrich, Mort Loewenthal, and Art Schwartz. I shall say no more.

As usual this summer the Institute offered several courses to students from industry in their Special Summer Session. Russ Dickey attended the course in analogue computation, and I met him at the Faculty Club for a drink one evening. This was Russ' first trip to Boston since graduation. His first job after leaving the Institute was with North American Aviation at their Inglewood plant. Leaving there he joined Convair, where he has been serving as senior dynamics engineer for two and a half years at their Pomona plant. In between jobs Russ took time out to earn his M.S. in electrical engineering at the University of Southern California. He is married and has two boys — Christopher, who is three years old, and Michael, 18 months. Gabe Isakson, who is with Kaman Aircraft in Connecticut, spent a week in Cambridge running some wind tunnel tests in the Wright Brothers Tunnel not too long ago. I was able to get together with him for lunch a couple of times.

Right about now would seem to be the appropriate time to insert the letter I recently received from Adelaide Toombs Sundin, who adds to the cosmopolitan flavor of this column by writing from Hudiksvall, Sweden: "Thought you might like to add to your Class Notes the addition that I now am a proud parent! Oly and I have a son born on June 21. He really is perfect (or at least we think so), and is definitely a character at the ripe old age of 12 weeks. Living in Sweden the past year has been an interesting experience. Of course I do miss my family and friends, but life here is full, and needless to say, I'm busy every minute. Never, in my career days, was every minute taken up as it is now in caring for a baby. Sweden is much like the U.S.A. in the amenities of living. I can hardly believe that such a small town as this, and so far North, could be so modern. The apartment we live in is more modern and better designed than most of them in the U.S.A."

"The past winter I learned to ski (somewhat!). Marvelous opportunities right out the back door — and we do have some cold weather, —30 degrees C. The continuous daylight — almost 24 hours — is wonderful in the summer, but now the days are really short, and soon it will be dark by 2:30 in the afternoon and not light again until 9 A.M. We seem so removed from the world political situation, possibly because Sweden has been so neutral; but living a stone's throw from Russia makes me a bit uneasy. The Russians are certainly throwing a lot of propaganda out over the radio, and are jamming up the American Forces Station

from Germany, so I can't hear the news. It's like home to hear an American voice. I hope your work is going well. I often think of the old times at M.I.T. Well, life marches on — I can hardly believe I'm way up here and enjoying it. There is a possibility I may be coming home for a visit this fall — but traveling with an infant is not my idea of fun, so it may have to wait until Spring! Oly says, hello."

The remainder of our news this month comes by way of the clipping services. Bob Kyhl has joined the staff of the General Electric Research Laboratory as a research associate in the electron physics department. Bob, his wife and nine-year-old daughter moved to Schenectady from Palo Alto, Calif., where he had been engaged in research at Stanford University since 1948. Joe Profita has been appointed assistant manager, district sales and services, in the equipment sales division of the Raytheon Manufacturing Company. Joe was formerly with Methods Engineering Council, a Pittsburgh consulting firm; and before that, he was market research manager with the New England Coke Division of Eastern Gas and Fuel Associates in Boston. Dr. Er-Chun Ho has been appointed assistant professor of engineering at Brown University; and Arthur Spiro has accepted the position of assistant to the vice-president in charge of merchandising at the Industrial Rayon Corporation.

Henry Lurie, formerly chief engineer for A. Kahn's Sons Company, of Cincinnati, has established his own firm, Henry A. Lurie and Associates. The firm specializes in plant engineering, power production and power design. Bob Harrison has been appointed assistant in charge of maintenance, assistant and chief engineer to the mechanical superintendent of the Dallas News. Bob has been with the News for more than five years. Jay Martin is to head the 1955 Red Feather Campaign as chairman of the East Metropolitan Division of Greater Boston. Jay has been performing volunteer work for several social welfare agencies for the past few years, and his appointment to an area division chairmanship to supervise and direct fund-raising activities comes as a reward for his outstanding work. Dr. Luther Chien, a chemist with the Du Pont Company, recently presented a lecture on the life and customs of the Chinese at the Broadway Methodist Church in Wilmington, Del.; and Leslie Martin has passed the fellowship examinations of the Society of Actuaries. Les is associated with the Aetna Life Insurance Company of Hartford, Conn.

Norm Holland, our permanent President, has become engaged to Jane Kelley of Germantown, Pa. I spent a very pleasant evening late last spring with Norm and Jane listening to a Harvard Band Concert and later drinking beer at Jim Cronin's in Harvard Square. Dick Barker was married to Mary Ann Faw of Westfield, N.J., last January. Dick is a field engineer with the Western Union Telegraph Company. Bill Wiehl was married to Pamela Damon Powell of Westport, Conn., in June. After a honeymoon in Nassau, the couple moved out to California where they are making their home in the Los Angeles area. Finally in a July

wedding, Sam Waldstein married Selma Swartz of Milford. — CLAUDE W. BRENNER, *Secretary*, 1470 Beacon Street, Brookline 46, Mass.

• 1949 •

On June 12 and 13, 49 hale and hearty members of our Class gathered at Chatham-Crest Lodge on the south shore of Cape Cod for a bang up fifth-year reunion. In case you've been wondering whether your old buddies, five years removed from their undergraduate days, are pretty well beaten down by now, the answer is an emphatic *no*. The hard-working reunion committee had anticipated that much of that old *joie de vivre* might still be coursing through 49'er veins and thoughtfully provided plenty of diversion with little supervision. Activities started off with a free-for-all softball game on Saturday afternoon where the number of runs scored approximated the cans of beer consumed. The game was a marathon affair — as new arrivals finished registering at the reunion headquarters, they drifted over and joined the line-up. Informality continued to be the keynote of the week end.

Saturday evening after an informal mixer, a well-turned-out banquet was held in the main lodge. The banquet was followed by a formal business meeting of the Class, the first since our graduation. The genial chairman of the reunion committee, Archie Harris, opened the meeting and, with the assistance of Russ Cox, squared us away on reunion arrangements. Kemon Taschioglou made a determined sales pitch to stimulate purchases of the attractive reunion favors, old-fashioned glasses decorated with a tipsy beaver. The sale of glasses incidentally helped to keep the class finances in the black. The meeting was then turned over to Tom Toohy who, after a word of greeting, regaled us with a very shaggy-shaggy dog story — "that horse can't talk, that little dog alongside is a ventriloquist." Official business included the re-election of all class officers with the exception of Chuck Holzwarth who had requested to be relieved of his duties as secretary. Accordingly, your new Secretary Summers Hagerman was elected (and makes his official debut with this issue of the class notes). Tom then called upon Bill Mitchell who reminded us of the existence of our 25-year gift plan which is instrumented through the purchase of \$1000 of regular life insurance by each member of the Class. (You get the insurance, the Class accumulates dividends on your policy premiums for the first 25 years of coverage.) The reminder was well taken as so many of us were embroiled in last minute activities in the spring of '49 that this plan did not get the support it should have. Also as part of the business meeting, the Class voted to extend official thanks to Chuck Holzwarth for his fine work as Secretary and the entertaining style of his class notes. After the business meeting we had an interesting lecture on low temperature research by a member of the staff of Arthur D. Little, Inc. A program of sport and travelogue movies closed out the planned activities. Card games and other forms of diversion ex-

tended on into the night. Sunday featured breakfast prepared to your individual order after which various groups scattered to the points of the compass for sailing, golf, swimming, and softball. As the crowning culinary achievement of the week end, the troupe regrouped for a delicious clambake by the seashore.

The members of the reunion committee deserve the thanks of all who attended. They were Milton Bevington, Russ Cox, Stanley Margolin, Kemon Taschioglou, and Archie Harris, Chairman. On the reunion subcommittee were Eugene Clark, Lawrence Holt, Frank Hulswit, William Jones, Al Kendrick, Joseph Lynch, John Marvin, George McQueen, David Powers, and Joseph Vitka.

With the exception of Messrs. Clark, Marvin, McQueen, and Powers, all members of the Reunion Committee were able to attend. In addition to members of the committee, the following individuals attended the reunion: J. L. Baker, Peter J. Cambourelis, Bruce Campbell, Jim Christopher, Alan W. Collins, John M. Cook, Francis P. Darcy, Fletcher Eaton, David D. Gaillard, II, Robert J. Gillmeister, Summers Hagerman, Jabez Harford, T. L. Hilton, Randall J. Hogan, Jr., John P. Horton, Harry W. Lambe, A. Scheffer Lang, Mat Leopold, Carl A. Lindstrom, Jr., Robert F. Mahai, Francis J. McCarthy, Kenneth W. McGrath, Howard L. Millard, E. W. Pilling, John C. Miller, William G. Mitchell, Joseph A. Murphy, Vincent R. Murphy, Stu Powell, Frank E. Roman, Harwood S. Rowles, Jr., Edward H. Somma, Charles M. Sutherland, Harrison N. Thibault, Tom Toohy, Vernon P. Turnburke, Jr., A. P. Van Stolk, and Edward J. Walz.

An interesting phase of the reunion was a poll covering 37 members of those attending. Vital facts probed and brought to light were the following: Range of salaries reported: \$4,500-\$12,000. Average salary: \$7,350. Married: 67 per cent. Children: one per family. House-owners: 50 per cent of those married. Car-owners: 80 per cent. Number of jobs held since graduation: High, four; average, two. Number of those currently employed in same field as that studied at school: 50 per cent. Number with graduate degrees: Masters, 10; Doctors, three. Half of the masters' degrees were in business administration, the others were in engineering. Whether this sampling of class members is typical or not remains unknown.

There were many items of news regarding individual members of the Class which came out of the reunion and replies to reunion committee mailings. Many of these will be reported in the next class notes column. In the meantime keep writing — postcards are wonderfully handy — and when you do write, please note the new address. — O. SUMMERS HAGERMAN, Jr., *Secretary*, Technical Marketing Associates, Inc., Concord, Mass.

• 1950 •

Best wishes for a very Merry Christmas and a Happy New Year to all of the Class of '50, and to all the happy spouses, and more important to all the little ones. After all Christmas is for the children to enjoy, but we'll let Dad in on the fun, too. And say, what are you doing on New

Year's eve? I have a wonderful suggestion for all loyal Fiftiesites. Round up some classmates in your area, and invite them over for the evening and be sure to tell them to bring along their Tech steins. Then take your own stein down off the mantle and dust it off for the big night. Comes the stroke of midnight, 1955, I expect the whole of the Class of '50, be they near or far, to fill their steins, raise them high, and then pledge that they will do their best to try and attend our fifth reunion on the weekend of June 11-12, 1955. That's not a very difficult New Year's resolution to keep, and I'm sure your committee is making sure that you will enjoy yourself at the festivities.

Charles E. Chase, who has been studying at Cambridge University under a Fulbright Scholarship, was married on July 17 to Wendy Irene Willis of St. Ives, England. The couple spent their honeymoon in the Channel Islands, and Paris and then sailed to the United States, where Charles will begin work on Project Lincoln here in Boston. Carolyn Kneen, of Hamden, Conn., and Gordon Allan Evans, of Milford, Conn., announced their engagement in September. In 1950, Gordon entered Cornell Law School at Ithaca, N.Y., where he studied law and from where he received his law degree in June. He is now affiliated with the Norden Instruments Company, but he has plans to enter the Navy in January.

J. J. Earshen writes that he and his wife, Constance, were married July 10 of this year, and went to Yarmouth, Nova Scotia, on their honeymoon. Since graduation he has been working at Cornell Aeronautical Lab in Buffalo as a project engineer in the Tactical Air Group working on radar systems development. In addition to his activities at the lab, he also has been going to grad school in electrical engineering at the University of Buffalo where he is also teaching. As soon as the golden words of his thesis are set to paper he expects to receive his M.S. George Spencer was at the Brooklyn Navy Yard for a while and now is at Sperry Gyroscope in Great Neck. Walt Marvin is with Raytheon and still in the gun dealer-ship business.

A letter from Dave Kret tells of his doings as follows: "I am now with the Allen B. DuMont Labs doing electrical circuit design for special electronic instruments. I was responsible for the DuMont publication *Transducers* which was issued in the fall of last year. I also received my master's degree in electrical engineering in June, 1954. I have been domesticated by a native charmer of New York and I received my first dividend in the spring of 1954. I must admit that I am more than slightly partial to my daughter, Dorothy Ellen."

A couple of more classmates said goodbye to their Uncle Sam since last edition. Ralph Johnston discharged at Wright Patterson A.F.B., and now residing at New Kensington, Pa. Charles Chittick dropped the ensign tag from his name and is now living at Weston, Mass.

To make up for those getting out I've also news of the following that have been "taken in." Private Gordon Hunt at Camp Detrick, Md., Lieutenant Walter Hylander at Albuquerque, N.M., Lieutenant

Richard Marsh at Fort Walton Beach, Fla., Lieutenant Edward Perkins at Menlo Park, Calif., Lieutenant George Pflasterer at Schenectady, N.Y., and Lieutenant Robert Randall at White Sands Proving Grounds, N.M.

A couple of months back I was headed for the Cape along Route 3 in Quincy when I passed a construction site. Being in the business myself, I am naturally curious of any new construction going on. The usual sign was up telling passers-by that the new addition to the Boston Gear Works was being constructed by the N. Adelman Construction Company. Does the name sound familiar? Well, it should, because the head of the N. Adelman Construction Company is none other than our own little Natalie Adelman, the Course 17 coed. Her father, Albert Adelman, is chief engineer for Coleman Brothers Corporation of Boston, heavy construction contractors. After graduation, Natalie worked for two years as an assistant to her father at Coleman's. One of these years was full time and the other part time while she studied law at Harvard Law School. Leaving Coleman Brothers, Natalie then went to work with Gil Wyner Company of Malden and she was superintendent on several building jobs. Deciding that she had enough experience, she set up her own firm in June 1953 and during the next year figured on several jobs, the biggest to date being the Boston Gear Works — a \$90,000 project.

Robert Abbanat is working in Chicago, Ill., with the Indoil Chemical Company. Carol Belton is with the Cosden Petroleum Corporation in Big Spring, Texas. Fred Barker is way up north country, Juneau, Alaska, on a U.S. Geological Survey team. Coming a little south, but not much, to Toronto, Canada, we can find Beryl Borsook at the Dorothea Knitting Mills. Dick Dillon is also up in Canada in London, Ontario, with the M. M. Dillon and Company. Now a quick detour all the way to Bandung, Indonesia, where Dr. William Dickinson is at the University of Indonesia. Back to the metropolitan New York area we can find Earle Du Bois at Westinghouse Electric in the city, Dr. Jack Fajans at Stevens Institute Tech in the physics department, and Herb Limmer with the Public Service Electric and Gas Company in Newark. If you stop in to the Applied Physics Lab at the John Hopkins University you would very likely find Ed Hayes hard at work. The U.S. Geological Survey has lots of recruits this month. Don Johnson is also working for the Survey and is stationed in Denver, Colo. Continuing westward to sunny Santa Monica, Calif., and Douglas Aircraft, we see that Bob Joyce is out that way.

I hate to leave all you easterners stranded out in the Californian smog but that just about wraps up this issue. Tune in again next month and we will continue in our travels around the nation, stopping off here and there to visit with our classmates. — JOHN T. WEAVER, *Secretary*, 68 Revere Street, Boston, Mass.

• 1951 •

It is my sad duty to inform you of the death of Frank Plummer and Ernest Garbarino. Ernie died as a result of an auto

accident in June. Frank passed away in April.

Ed Dickerman sent in a note to report the wedding of Dick Hammer and Etta Rowland at Sheridan, Wyoming. Chuck MacDonald and Jeanne Harrison said "I Do" at Charlotte, N.C., in October. Rane Curl and Katherine Ide became Mr. and Mrs. in June at New London, Conn. Rane is currently completing his doctor's thesis at M.I.T. Hank Spaulding decided to leave the "lonely bachelor's existence" by joining the married group. He and Ann Emerson were married at North Danville, N.H., in June. Bob and Rachel Gooch became proud parents of Thomas Gooch, who joined them in September. Tom's statistics: eight pounds and two ounces. Best wishes to you all!

Gene Graham decided to give your Secretary a break by jotting down a few items concerning his activities since 1951. He writes: "In June, after graduation, I migrated to New York to work as an engineer for California Texas Oil Company. Most engineers eventually get assigned overseas, but while waiting in New York, I met and married the girl next door, Joyce Strasser, in October, 1952. In April, 1954, we were asked if we would like to go to the Philippine Refinery, so now we're on our way. If any of our lads are in the Far East Fleet, they might enjoy dropping in for a visit and we would enjoy seeing them. Evan Evans is also working with Caltex. So far he has made two separate tours of about two months each, inspecting and reporting on new oil strikes and recovery installations in Sumatra and Australia. My wife, three-month-old son and I expect to arrive at the town of Batangas, about 74 miles south of Manila, in July, at which time I commence my duties." Thank you, Gene and best wishes in your new assignment.

Ben Schranze reports that after a tour of duty in the Marines, he is now a design engineer with Pratt and Whitney Aircraft at Hartford, Conn. Ben's work is focused on thermodynamic studies and heat transfer phenomena. Ben and Lenette were expecting Sir Stork in October. Ben tells us that Bob Lucas, Course II, is associated with Arthur D. Little. John Pasieka was also employed in Boston. Dave Ragone received his doctor's degree in Metallurgy at Tech in September, 1953, and then joined the University of Michigan faculty as assistant professor of Metallurgy. Dave extends a welcome to '51ers. He can be contacted through the Department of Chemistry and Metallurgical Engineering, University of Michigan, Ann Arbor, Mich. Dave also reports that Ed Huckle and Merton Flemings received their doctor's degree in metallurgy. Ed is working for the Locomotive Finished Materials Company, in Atchison, Kansas; Mert is employed by the American Brake Shoe Company in Mahwah, N.J. Lou Galan is an Air Force officer at Michigan and was taking several courses.

Steve Eisen has completed his training program with the Equitable Life Assurance Society at New York. He is now a chartered Life underwriter. If you have any questions concerning insurance, fire them at Steve. He'll be glad to help you.

Russ Parker and Barbara Brackett were married in September at Melrose. Russ is an appraiser with the Factory Mutual Insurance Company, Boston. Bob White and Eleanor Edwards were wed in September at Mystic, Conn. After serving two years with the Air Force, Bob joined the engineering division at the Electric Boat Division of General Dynamics Corp., Groton, Conn.

May I focus the subject topic on Dr. Karl T. Compton. For all of us the news of his death came as a great shock and we all feel the loss of a great friend. As a Class we were fortunate in knowing and working with Dr. Compton during our four years at Tech. As Alumni we can gauge his great contributions towards the goal of continually higher levels of educational and research achievements for M.I.T. I understand that a Memorial bearing his name will be established. It will be the Karl Taylor Compton Laboratories of Nuclear Science and Electronics. The entire 1955 Alumni Fund will be allocated for the Memorial. Each of us can help make the fund a success to bring the living Memorial into reality.

A bit early according to the time date but I want to wish each of you a very Merry Christmas. Be a Santa Claus to your Secretary and drop him a note of your activities. — STANLEY MARCEWICZ, *Secretary*, Route 2, Highland, N.Y.

• 1953 •

A few nights ago, I had a very enjoyable experience. I met a fellow Tech man, Ralph Sievers who, like myself, has been given the opportunity of partaking of the many joys which this Land of the Morning Calm offers to us tourists. Of course, one has to look pretty hard for the joys, and with my poorly developed senses, I have found some difficulty in ferreting them out. Seriously though, this is a wonderful place to save money. However, if one exerts the effort, he will find much of interest in the Korean culture and people and also in the variegated landscape of the country itself. Even if the country offered nothing, the knowledge gained from the association with the Army and the men of whom it is composed, makes the time spent here well worthwhile. Like anything else in this life, a direct proportion exists between the input and the resultant output.

Ralph Sievers, like Doug Meyer and myself, has the position of Assistant Operations Officer in the 10th Engineer Battalion. He has been in Korea since March, and has a mere nine months to go. Ralph also mentioned that Jeff West and Bob Cotton are in the 10th Engineers with him.

You may recall my mentioning a letter from Gene Richter in the last issue. Gene is occupied as a platoon leader in Baker Company of the 430th Engineer Construction Battalion. At the time that the letter was written, Baker Company was in the process of moving to a new location (the name of the village is unimportant — north of Seoul they are all the same). The unit's mission will be the construction of the headquarters for the 1st R.O.K. Army "real stateside with flush toilets and all," says Gene. Gene ends his letter with two marriage announcements — Chuck Down-

ing and Don Miller (both B Θ II). Chuck married Jerry Leonard — Don, Sally Smith. Both girls are secretaries at the Institute.

I note a few things from Fred Brecher's letter which I did not include in the last issue. Thierry Thys and Bill Holden '52 are with Fred at Wright-Patterson Air Force Base. Thierry arrived around the latter part of January, and Bill has been there since November of last year. Dick Chambers (another of the Techmen from Course XVII) is at Scott Air Force Base studying communications, while another Course XVII man, Bob MacDonald, is at Bedford Air Force Base filling the slot of installations officer. Fred also passes on a bit of hearsay from Joe Woolsey — Emil Tessin is now stationed at Sampson Air Force Base.

I received a note from the former fireball of Burton House, the boy who pulled me through structural analysis for two years, Ralph Anglin. He seems to be doing excellently with the Robbins Construction Company of Philadelphia, Pa. His two children are both fine.

Jim Zurbrigen and the former Roberta Rowell were married April 17 in Montpelier, Vt. Where the two of them have "set up shop" I don't know. However, Jim is with the Air Force at Samson Air Force Base in Geneva, N.Y. The principals in the other wedding were Chris Whitcombe and Helen Howe, married on July 6. The ceremony took place in Baltimore, Md. Chris is among friends at Wright-Patterson Air Force Base in Dayton, Ohio. Once again I'm not sure of the exact lo-

cation of the bride. Thanks to those of you who have written; you make the writing of these notes a joyful diversion, rather than a necessary task. — VINSON W. BRONSON, JR., *Secretary*, P.O. Box 409, Danbury, Conn.

• 1954 •

As Ed Eigel, our regular Secretary, is in Germany gaining in his intellectual abilities, the task of writing the '54 class news has fallen to me. There actually isn't as much news as there should be. The write-ups in the future can be a lot more interesting if each of you class members would drop me a line as to all the changes in your lives.

The M.I.T. Grad School has been doing a good job of keeping me busy — as it is with my roommate, Hal Olsen. Hal is a research assistant in Course I and expects to be at M.I.T. for the next two years. We run into any number of people here. Hal reports that Bill McTigue is working for the Corps of Engineers in the Frost Research Labs. Speaking of the Corps of Engineers, Dave Vogel, Tom Bird, Dave Robbins and Don O'Neill are in Fort Belvoir. I saw Larry Holmes the other day and he reports that the Harvard Grad School is keeping him busy. Bob Anslow says the same for the Harvard Business School, but he looked mighty relaxed to me at the Beta's houseparty the other night.

Quite a few of the '54 grads are out in the Cleveland area — Rich Wilson, Coley Bresee, Al Ward, and Jerry Canney. Coley

was married to Janet Oakson of Montclair, N.J., October 30. Quite a few of the Class are entering the matrimonial state. Phil Sayre and Harriet Welles were married last July. Mel Cerier married Miriam Bloom, and Phil James married Barbara Fagan, a Wellesley grad. Speaking of Wellesley, Tom Henderson and Mitzi Gebhart were married in Oak Park, August 28. Jack Farquhar and Phil Perry are down in Oak Ridge at the Course X Practice School. Jack relates that the life is fine. He also reports that Stew Smith is working for Shell Oil in Montana. George Perry is working in Los Angeles and apparently enjoys life in Southern California. This is opposed to Jim Dwyer who got so nostalgic for Boston that he wandered up here from Philadelphia for a weekend. While passing through the corridors we saw several of the old grads enrolled here for higher education. Steve Poulos, Dan Lickly, Herb Jacobsen are all here at Tech, as is Charley Burnham and Yo Swenson. Word has it that Shelly Dick is returning to the grind next February. This is about all the news for now — and it seems pretty scanty for some 700 strong. How about being sure to drop me a line about either yourselves or any of our classmates? And I'd also like to remind you of the Class Insurance Program in conjunction with the 25-year gift. For the details on such a policy contact Mr. Stanley W. Turner, Provident Mutual Life Insurance Company, 30 State Street, Boston. — DAVE WONES, *Acting Class Secretary*, 37 Bay State Road, Boston 15, Mass.

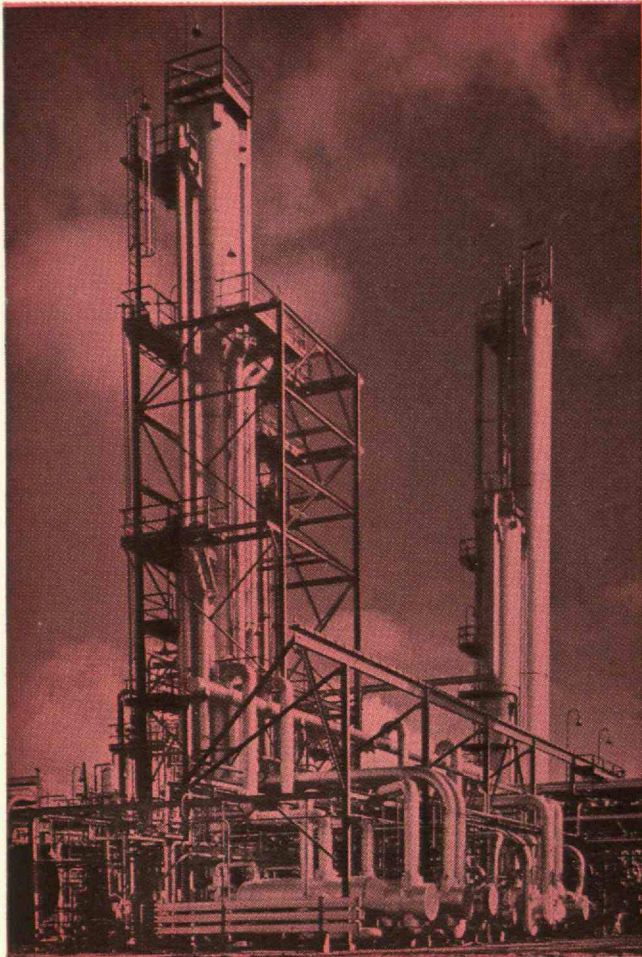
Of course you will want to attend!

- What?** Another M.I.T. Regional Conference
- Why?** To learn about recent progress in technology
- Where?** Hotel Adolphus, Dallas, Texas
- When?** All day Saturday, January 29, 1955, beginning 10 A.M.
- Who?** Speakers will include:
- James R. Killian, Jr., '26
President of M.I.T.
 - Walter G. Whitman, '17
Head, Department of Chemical Engineering
 - C. Stark Draper, '26
Head, Department of Aeronautical Engineering
 - John G. Trump, '33
Professor of Electrical Engineering
 - Douglas M. McGregor
Professor of Industrial Management
- How?** Inquiries regarding registration should be sent to:

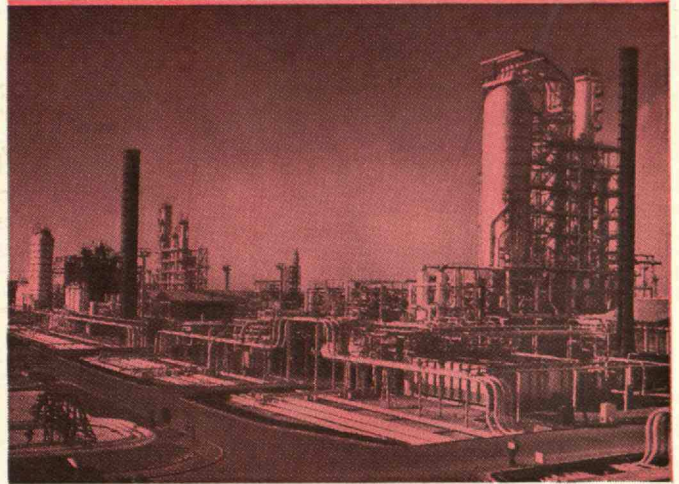
Edward O. Vetter, '42
Geophysical Service, Inc.
5900 Lemmon Avenue
Dallas, Texas

LUMMUS

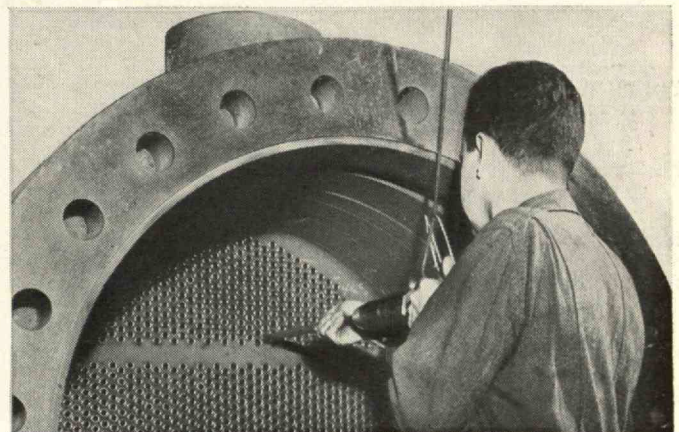
DIVERSIFIED TO BUILD OR EQUIP PETROLEUM, CHEMICAL AND POWER PLANTS



Engineering and construction of chemical and petrochemical plants



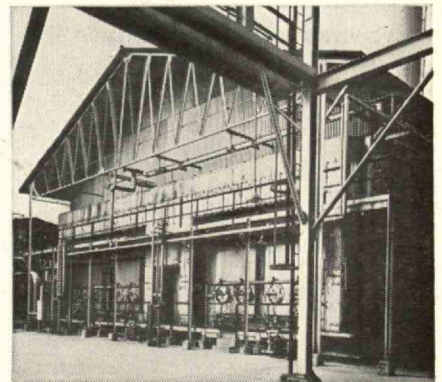
Engineering and construction of petroleum refineries



Manufacture of heat transfer equipment
(Heat Exchanger Division)



Shop fabrication and installation of pressure piping
(Fabricated Piping Division)



Manufacture of oil heaters
(Oil Heater Division)

In the past 50 years, Lummus has designed, engineered and constructed over 700 major plants and installations throughout the world. We would be pleased to work with you on your next project.

The Lummus Company, 385 Madison Avenue, New York 17, N. Y.
Engineering and Sales Offices: New York, Houston, Montreal, London, Paris. *Sales Offices:* Chicago, Caracas. *Heat Exchanger Plant:* Honesdale, Pa. *Fabricated Piping Plant:* East Chicago, Indiana.

where there's Motion there's need for the **STROBOTAC[®]**

The Strobotac has countless industrial uses. It "STOPS" MOTION and MEASURES SPEED with an ease and rapidity not obtainable with other equipment.



Type 631-BL
STROBOTAC \$150.00

Wide Range: 60 to 14,400 rpm, direct reading;
can be used up to 100,000 rpm

Short Flashes: 5 to 10 millionths of a second

Power: instrument operates from ordinary
115-volt, 60-cycle lines

Dimensions: 7 $\frac{1}{8}$ x 9 x 10 inches

Weight: 9 $\frac{1}{2}$ pounds

Evaporative condensers, used in the air-conditioning and refrigeration industries, perform satisfactorily only if the correct quantities of air and water pass around the condensing coils. The Baltimore Aircoil Co. uses the G-R Strobotac for measuring and controlling the fan and pump speeds which determine the rate of air and water flow. They tell us the Strobotac is the ideal instrument for the job, as it permits them to conveniently and accurately check the speeds of these parts.

Repetitive stroboscopic light flashes will "stop" or s-l-o-w motion of moving parts in all types of equipment and machinery, permitting detailed observation. All irregularities, worn parts, misalignments, or other defective operations are readily revealed. As an electrical tachometer, the Strobotac will accurately measure speeds of rotating, reciprocating, vibrating and other cyclic mechanisms over a 60 to 100,000 rpm range. The instrument does its job with absolutely no connection between Strobotac and moving part. There is no interference with the moving object under investigation, nothing to alter operating conditions.

Compactness, extreme ease of operation (only one knob controls the flashing rate), and operation from commonly available 115-volt, 60-cycle power make the Strobotac a widely useful industrial tool.



Photo courtesy Baltimore Aircoil Co., Inc.

You'll find, as have so many others, that the Strobotac will very rapidly pay for itself in time saved and reduced defective work. There's a use for the Strobotac wherever there are machines, equipment and production operations.

We sell DIRECT. Prices shown are NET, f. o. b. Cambridge, Mass.



STROBOTAC[®]

Manufactured Exclusively by . . .

GENERAL RADIO Company 275 Massachusetts Avenue, Cambridge 39, Mass

Since 1915 — Manufacturers of Electronic Apparatus for Science and Industry